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I

BERGSON AND EDUCATION[1]

Humanity learns in spite of itself. Whether it turn against or welcome a thinker, a reformer, an invention, or a custom, it is inevitably influenced by each. This is partly because humanity, maybe unconsciously, is in a sense prepared for and in part recognizes what comes, since the great ones of the earth are as much a product of their times as moulders of them; they but gather together and weave into another garment of Truth the single threads that others may have spun, a garment being a very different thing from a number of threads. And the garment that Prof. Bergson has woven will have the fate of all such garments—the fate of Darwin's *Origin of Species*, which, greeted on many sides with animosity, has influenced all thought since its publication. Bergson's philosophy will permeate the ideas of the twentieth century slowly and surely, and it may be in the wide realms of religion and education that its influence will have most effect. Whether the philosophy is verbally accepted or rejected, it is unescapable.

"The future," says Bergson,[2] "seems to belong to a philosophy which will take into account the *whole* of what is given." And so the future will give an education to the *whole* personality and take into account more than intel-

[1] Reprinted, by permission, from the *London Journal of Education.*

[2] In the *Hibbert Journal*, October, 1911.

lect and memory. At present there is no central, generally recognized aim in education towards which all its branches should converge, and it fails thru not being one great whole leading on to after-life. Roughly speaking, education may be said to have reached the third stage in its development. It was at first based solely on authority, and what was taught was to be accepted because the instructor—whether professor, pope, priest, book, church, or custom—said so. Disbelief was a crime; the intellect was to be kept within bounds. But, in his *Essay concerning human understanding*, Locke is one of the pioneers in the second stage when he says that children should be trained to exercise their intelligence instead of relying blindly on authority; logical reason was to be the guide now. And the intellect has been trained by geometry, by organized science teaching, and by various other artifices. But the third stage has scarcely begun; glimpses are seen of what it may be in certain American schools, in the Montessori method, in so-called "free discipline" schools, and in the feeling of some teachers of all grades that something is wanting. That something is *Life* in its most comprehensive sense.

To the present dissatisfaction in the educational circles where more than syllabuses or examinations or conventions are thought on, Bergson has, perhaps unconsciously, a strong and leading message. It would be well to consider the chief aspects of his philosophy which can greatly influence education and its methods. In general the tendency of education at present is to set free the child and to encourage spontaneity, naturalness, and the exercise of *all* its faculties. A study of Bergson's philosophy as expounded in his written works[3] emphasizes the need of cultivating feeling and will in addition to intellect, of giving the power of appreciation for the full realm of art as well as for the wonders of science, and of allowing scope for initiative at every stage.

[3] *Time and free will, Matter and memory,* and especially *Creative evolution.*

The theory of duration is sufficient in itself to produce a complete change in the method of testing the results of teaching. At present this is done by examinations, which are an evil that vitiates the whole problem. Duration has been called Bergson's secret, and it is what he means by *real* time—not the time that is measured with hours and minutes that can be separated one from the other, for this time is only another form of space.[4] Duration has no relation to number—it is qualitative, not quantitative, and is an evolution of consciousness rather than an increasing quantity formed by the *addition* of states of consciousness. Each succeeding state of consciousness permeates all the preceding ones and can not be separated from them without causing a real change in its meaning. Duration thus denotes a unity that can not be subdivided: it is a pure heterogeneity within which there are no distinct qualities. Duration is within ourselves and implies *succession*, the interpenetration of our states of consciousness. Thus, consciousness never goes thru the same state twice; a feeling, the second time it is felt, is different, if only by its being felt the *second* time. Our consciousness is a continual growth. The teacher produces states of consciousness, each of which permeates the result of all the previous states and gradually helps to build a character, a life. "What is our character," says Bergson,[5] "if not the condensation of the history we have lived? . . . It is with our entire past, including the original bent of our souls, that we desire, act, and will." And how can a written answer to a question test states of consciousness? In the idea that we use the whole of our lived experience in acting, that our personality is the actual synthesis of our past states, lies, as a corollary, the importance of giving children or pupils of all ages experiences that will be of benefit, since every experience has its effect, and character is being continually created. Increase of sensitiveness and more delicate handling of young minds will be the re-

[4] *Time and free will*, Chapter II.

[5] *Creative evolution*, Chapter I.

sult of a nearer realization of the meaning of *real* time, whatever name may be given to it. A teacher who understands that an identically same feeling can never recur will be solicitous that *all* the influences moulding his charges should be of a kind to produce desirable states of consciousness and will not attempt to "test" his teaching and effect by examinations.

It is, however, Bergson's doctrine of the intellect and intuition that gives scope for reforming or developing educational methods, here, perhaps, more than in any part of his philosophy. There is no depreciation of the intellect in his theory, but he demonstrates that it is mainly fit for *action* and is chiefly skilful in dealing with matter. When it attempts to comprehend life and movement it fails. The intellect is but one deposit of the evolutionary movement, and therefore it can not grasp the whole movement; life transcends the intellect, and therefore can not be fully understood by it.[6] In the one place where he mentions education, Bergson speaks of it in connection with the limitations of the intellect:

"We see that the intellect, so skilful in dealing with the inert, is awkward the moment it touches the living. Whether it wants to treat the life of the body or the life of the mind, it proceeds with the rigor, the stiffness, and the brutality of an instrument not designed for such use. The history of hygiene or of pedagogy teaches as much in this matter. When we think of the cardinal, urgent, and constant need we have to preserve our bodies and to raise our souls, of the special facilities given to each of us in this field to experiment continually on ourselves, and on others, of the palpable injury by which the wrongness of a medical or pedagogical practise is both made manifest and punished at once, we are amazed at the stupidity, and especially at the persistence of errors."[7]

The error consists not only in using intellect alone to solve educational problems, but also in training and en-

[6] For the nature of intellect, see *Creative evolution*, Chapter II.

[7] *Creative evolution*, pages 173–4.

couraging pupils themselves to use the intellect alone. Self-conscious instinct—*i. e.* intuition—should also play its part, and thus the whole consciousness, which consists of intellect combined with intuition, would be practised and evolved. According to Bergson, there remains around the intellect a vague nebulosity which is made of the very substance out of which has been formed the luminous nucleus known as the intellect and which possesses certain powers complementary to the intellect. We have only an indistinct feeling of these powers within ourselves, but they become more distinct when seen at work in evolution.[8] Intelligence and instinct are turned in opposite directions—the one towards matter, the other towards life. The difference between them is formulated thus: "There are things, that intelligence alone is able to seek, by which, by itself, it will never find. These things instinct alone could find, but it will never seek them."[9]

But it is futile to ask, How, then, can intuition be trained? for the question itself savors of the intellect. There can be no rules for training intuition; it can only be left free to grow, and not represt and distrusted. If this principle is adopted in education, far less of rigidity must result. Much fewer repressive school rules will be made, and textbooks will greatly alter their character. Class lists and prizes will go, for both imply that intellectual or memory work is the most important affair in school life. Science will still keep its authority (it will probably be taught more artistically), but its limitations will be taught as well, and its domain will not extend beyond matter. Feeling, attitude, aim will be regarded of at least as much value as intellectual attainments. Analysing, tabulating, formu-

[8] Bergson says of the development of intellect and instinct: "The cardinal error which, from Aristotle onwards, has vitiated most of the philosophies of Nature is to see in vegetative, instinctive, and rational life three successive degrees of the development of the one and the same tendency, whereas they are three divergent directions of an activity that split up as it grew. The difference between them is not a difference of intensity, nor more generally, of degree, but of kind."—*Creative evolution*, page 142.

[9] *Creative evolution*, page 159.

lating will still be practised, but in a lesser degree, while imagination and sensitiveness to the spirit of a subject will claim more time. Intellect tends to settlement and convention, while intuition tends to freedom and spontaneity. It is by encouraging spontaneity and not crushing individuality that a more true psychology can be learned. At present our ignorance of the mind's workings, the inner feelings, and real motives, especially of young people, is lamentable. The admonition *know thyself* is as necessary today as in classic times, and *know thy pupils* is an indispensable maxim in education that is to be of any worth.

Connected with the idea of spontaneity is that of creative activity. If a child's initiative is not dulled or reproved—and it takes but little to blunt or repulse the antennae of a young soul—then it will evolve into individual creation and art, and "there is no greater joy than that of feeling oneself a creator," and "whatever joy is, creation has been."[10] This joy in creation should have its way in education as in all other spheres. Let the young soul go along its own bypaths, for the hills of attainment can be reached by other ways than the parched high road: and if the teacher gives a direction occasionally the pupil will travel faster than if he were continually being driven. Every encouragement towards creation is an encouragement towards one of the true ends of life, which can be exprest in Bergson's words thus:

"If, then, in every province the triumph of life is exprest by creation, ought we not to think that the ultimate reason of human life is a creation which, in distinction from that of the artist or man of science, can be pursued at every moment and by all men alike; I mean the creation of self by self, the continual enrichment of personality by elements which it does not draw from outside, but causes to spring forth from itself.[11]

"We are creating ourselves continually . . to exist

[10] Bergson, in the *Hibbert Journal*, October, 1911.

[11] *Hibbert Journal*, October, 1911.

is to change, to change is to mature, to mature is to go on creating oneself endlessly."[12]

Life, consciousness, imply a need of creation, but merely literary essays, overmuch direction in science, lessons, the instilling of many facts, the learning "by heart" for the sake of examinations, are not conducive to the expansion of any creative faculty.

The only way of developing what Bergson calls the "potentialities without number" of human consciousness, and to reach the "infinite horizon" opening before us, is by not depending so much on past standards (while acknowledging their value then), but by looking more to the possibilities of the future. He says we are essentially drawn and inclined towards the future because we are creatures of action, and every action is like a leap into the future—into the next moment. Indeed, he regards consciousness as a hyphen between the immediate past and the immediate future; it is memory, choice, creation all in one. "If we examine this point more clearly, we shall find that consciousness is the light that plays around the zone of possible actions or potential activity which surrounds the action really performed by the living being."[13]

So that, where there is not some kind of choice or initiative either of thought or action, consciousness is apt to be dulled and attention falls asleep. But the future belongs to the child, whatever we make him. The sum total of the actions of one generation is the result of the sum total of the innumerable influences acting on its childhood; those who stunt any faculty have more responsibility than they are aware of, for "every human work in which there is invention, every voluntary act in which there is freedom, every movement of an organism that manifests spontaneity, brings something new into the world."[14] In one of his finest passages[15] Bergson shows the responsi-

[12] *Creative evolution*, pages 7, 8.

[13] For most interesting discussions on Consciousness see *Creative evolution*, Chapter II, and *Hibbert Journal*, October, 1911.

[14] *Creative evolution*, page 152.

[15] *Ibid.*, page 135.

bility of one generation to the next, and hints that in this care may lie life's secret. He speaks of each generation leaning over the generation that shall follow, and of the fact that the living being is, above all, a thorofare. If, as he says, "the essence of life is the movement by which life is transmitted," then also the essence of education is the attitude it gives towards life and its growth. There can be infinite variety in the manifestations of life, and individuality can admit of any number of degrees and kinds. This implies that no one ideal or standard can be followed forever; life is growth, evolution, unceasing transformation, a continuous creation of unforseeable forms. Unforseeable! Therein lies its freedom. "Harmony," says Bergson, "is rather behind us than before."[16] We create the road as we travel, and can look back on it after having past over it. In that case *all* is open before us, and the solemn thought emerges that the evolution and future of humanity can be guided by itself. Mankind can make of itself and its environment what it will; the power and the means lie in its own hands. In this idea of a grand unfinish there is room for courage and hope; there is an exhilaration and spur to effort: there is an increased need of giving a worthy point of view, moral in the broadest sense, to the generation that waits its turn to carry on the slow raising of the race to forward its creative evolution.

Into this there comes, of course, the problem of Free Will; but the problem vanishes[17] as such if the theory of duration is adopted. The parts in the discussion that most concern education are side issues—*e. g.*, the affirmation that a psychic fact does not conform to physical law and can never be exprest in terms of space. This is a message that should also speak against rigidity in teaching, against pigeon-holing facts, against mere examinations, and should regard rather the probable changes caused in a pupil's mind and attitude by the manner in which a subject is handled. Education would accomplish more of real

[16] *Creative evolution*, page 54.

[17] In *Time and free will.*

value were it more psychologically subtle in its treatment of living souls.

Of course, many objections will be brought forward to show that the foregoing suggestions are impossible. But it must be borne in mind that nothing could have seemed more impossible at one time than the abolition of slavery. Similarly the abolition of rigidity, convention, mere intellectual training, etc., in education, impossible as it may seem, will come about as surely as the abolition of the once indispensable "payment by results" has done. There are many and grave difficulties in the way, the chief being, in elementary schools, the size of the classes; in secondary schools, the examination systems; and, in all schools, the lack of a high level of sensitiveness and "personality" in the majority of the teachers. This is not a reflection on the teachers' character—the majority are conscientious and hard working, but they live too much in one groove and need more breadth of outlook and greater knowledge of present-day problems, for these problems will have to be solved by their charges. The need in a teacher, whether of elementary or secondary or higher school, is not so much a university degree (tho knowledge, of course, is essential), as a personality that sees more than school, that sees the world and life as it is, that is sincere in its desire to make the most of the *whole* of each child, and thereby to help in the evolution of a finer type of humanity. Brilliant successes at examinations are an altogether mistaken test of a school's value—its value lies in the number of human beings it can turn out who have nothing to *un*-learn, no false standards to break down, and, withal, who possess an attitude to life, work, and the world that makes them eager to be of use. To attain this time-tables must be vastly changed as well as methods; but such changes can come but gradually. The time allotted to various subjects will be altered—*e. g.*, much less given to arithmetic and other branches of mathematics unless the pupil is specializing, more time given to the history of mankind (not dates and

battles and kings) on the globe, its struggles, customs, ideals. And the method of presenting subjects will be altered so that the spirit and lesson of a subject will be imbibed rather than details and facts—*e. g.*, science teaching can be made beautiful and a sense of the *wonder* of the world instilled.[18]

Bergson's own method of unfolding his philosophy[19] is an instance of the poetical expression that can be given to scientific thinking; in such artistic work there is no disparagement, but the highest appreciation of the intellect, and yet there is due proportional value apprised to other life forces. "The philosopher must go farther than the scientist,"[20] and so must the teacher go farther than the instructor. The teacher must have before him a central aim towards which all "subjects" converge,[21] an aim which fits the pupil for life, not merely for examinations or for work. In subject methods, and aims, in size of classes, and kinds of teachers, in "discipline" too, much can be changed by a student of Bergson's philosophy, and in changing these things he will be but going with the spirit of the time.

Many teachers deprecate the loosening of the bonds of discipline, and do not realize that effectual guidance, not prohibitions, is the true training; discipline by external rule is far inferior to discipline imposed by the pupils themselves. The stereotyped kind of child that is produced by the thousand yearly—non-imaginative, conventional, with little initiative or self-guidance, is a result of present-day discipline; a comparatively easy product compared with the natural, self-ruled, courageous young citizen of the future. Efforts to imprison a child's mind and to inhibit his actions merely strengthen his desire for freedom, and when he escapes he returns not, nor does he know how

[18] *Let youth but know,* by "Kappa," emphasizes this point.

[19] Especially in *Creative evolution.*

[20] *Creative evolution,* page 390.

[21] The best attempt at this has been made in a correlation scheme by Mr. F. J. Gould, issued by the Moral Education League in 1912.

to use his freedom worthily. But if he is allowed to go when a strain is felt—either on a speculative journey or other quest of interest—and the teacher accompanies him, he will return satisfied. This principle applies to almost every case of ordinary difficulty.

It is true in education as in philosophy that the "problems which interest us as *human things* above all else, and which are for us the vital problems, have very seldom been squarely faced."[22] The twentieth century, however, is facing some of the important problems, and side by side with the evolution of the teacher into an enthusiast for the coming generation will necessarily go the evolution of the Board of Education into an educational body; for as needs become recognized attempts at providing for them arise.

No revolution can come, for vast changes work slowly, using what has been to form what shall be. And the gradual addition of other considerations than intellect in the question of methods of education will be but a development, already begun, of past attempts, at training up the child in the way it should go. Like all else in our human civilization, education is a creative evolution, and forms its road of progress as it travels.

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[22] Bergson, *Hibbert Journal*, 1911.

II

THE LIBRARY AND THE GRADUATE SCHOOL[1]

If some college administrator should come to me and say, "I have just been given $100,000 for the improvement of my university *as a university*—what shall I do with it?" my unhesitating and immediate answer would be, "Spend it on your library. If you have a library, get more library and make available what you have by a more complete catalog, by printed special bibliographies, by the editing and reproduction of rare items." And I should adhere to this advice even in the face of claims for the new gymnasium, the administration building, the extension department and the stadium.

To put the matter briefly, without access to adequate library facilities, no university is a university, or in other words, no graduate school is a graduate school. For the library there is no substitute or counterfeit. Nothing we can hand over the academic counter is just as good. The new building for entomology, a six hundred thousand dollar chemistry laboratory, a new library building or a materials testing-plant may fill more space in a catalog and the student or prospective addition to the faculty may be imprest thereby, but the fact remains that the entomology department may need the *Biologia Centrali Americana* worse than it does floor space, the *Berichte* and *Abhandlungen* of a single learned society may save half the efforts of the chemistry department to do something new, a complete file of Engineering Experiment Bulletins may put half the equipment of the materials testing laboratory on the scrap heap and a library building that forces economy in book-buying stands as a melancholy monument of the possibilities it has destroyed. Let no one connected with

[1] Read at the meeting of the Association of American Universities, November 7, 1913, at Urbana, Illinois.

the promotion of graduate work deceive himself—no single thing is more important in advanced work, that really advances, than the literature of the subject, be it in the sciences, pure and applied, or in the humanities, impure and unapplied.

"Without access to adequate library facilities" was the phrase with which the above paragraph opened. Access and not possession is the point to be strest. A university might exist in Washington, D. C., without a library of its own so long as the shelves of the Congressional Library were open to its students; New York and Boston would be noteworthy library centers without the fine collections of Columbia and Harvard.

When it comes to the definition of the word adequate one ought to hesitate, but to hesitate would mean a lost opportunity to give discussion a starting point. What is more important, hesitation in defining the meaning of adequate library facilities for graduate work would mean a lost opportunity to set approximate standards. Given a reasonably well-selected library of 100,000 volumes, outside the professional collection for law, medicine and pharmacy, a college of 1000 to 1500 students may take care of its undergraduate work and expect to furnish the literature for candidates for the Master's degree in ten or a dozen departments. If the buying has been concentrated—a thing rarely done within these limits—in the field of some group such as the biological, the physico-chemical-mathematical or perhaps even the social sciences, or a language group—a claim may be made to carry students farther, even perhaps to the Doctor's degree in the fields of special library strength. If such a library is not growing at the rate of five to ten thousand volumes a year, it endangers if it does not forfeit the generous rating given it above. When one speaks of a working library of 200,000 it must be with respect and the admitted possibilities of the Master's degree in many fields and the Doctor's degree in ten or a dozen departments while recognizing that there can be but

mediocrity in the literature of twice as many more. To be even more specific by putting down figures for departments is still more hazardous, but let me venture again. There would be some but not many fields of history, and those limited in time or area for both American and European history, in which a history department with 15,000 at its command could promise to see a doctorate candidate thru to the bitter and better end. Harvard has in the field of the history of each of several foreign countries more than is here set down for the whole subject of history. A classical department with less than 5,000 volumes would need to have discriminated in its buyings and its selection of subjects if it found dissertation material for a doctorate candidate. Graduate work in history and the social sciences for the Doctor's degree is possible, of course, but not promising when this group of four departments are caring for their constituency of both undergraduates and graduates on less than 30,000 volumes. The major part of a Doctor's dissertation may, of course, be worked out even in departments having and depending upon such an extensive literature as the social sciences within the range of relatively few books, but the dissertation is not the only thing which tests the library. The candidate in a period of one to three years' residence is supposed to be taking work with professors who are themselves consuming literature and needing access to something more than the equipment for a single piece of work in a narrow field by a solitary graduate student. In the sciences the standard may be established with somewhat less emphasis upon collections of what has been published, but with rather more emphasis on the proportion of current literature, periodicals, scientific society publications, etc., received in the field of chemistry, physics, zoology or any similar field. What we are here estimating is not the number of books necessary for a dissertation, but for graduate work. This phase of it is the one of interest to our association, which bases its membership, present or prospective, in part, at least, upon the opportunities offered to advanced students.

Perhaps enough has been said to emphasize what is or ought to be a commonplace of graduate school policy and work, that the library is the one central all-important institution making possible or impossible by its strength or its weakness real university work by students and instructors alike. There is not a graduate school dean or instructor who has not seen students leave for institutions with better library facilities than his own or who has not, I hope, sent them elsewhere when the necessity for greater library facilities was vital to the students' further progress. There is no university president who has not seen his faculty gain or lose its strongest members because he could or could not offer the library equipment they must have if they were to be productive scholars.

If any graduate school or university official is of the complacent opinion that time will remedy the weak spots in his library, he is blind and deaf to the book market as it is today. Time may be necessary but it is an expensive element. The number of sets of great works, publications of learned societies, scientific periodicals of long standing not already located in some institutional library is limited. In some cases they may be counted on the fingers of one hand. The German professor with a great library to come on the market at his death replete with long runs of important publications is almost an extinct species. The second-hand book dealers recognize this even if university officials do not. The growing rarity of great fundamental sets together with the active buying in recent years by certain American libraries is putting it beyond the range of possibility for a university library to be a great library if it is not that by the end of the next twenty, perhaps even in the next ten years. The price of rare and important items is going up annually or at least, as I can testify from experience, biennially, and it is the old story of the Sibylline books, as the years go by the sets are less perfect, less complete and the price is higher. It will of course always be possible to buy books to the extent of any probable library

funds, but that may mean only the accumulation of so many volumes, not the making of a library in which you can delve to the bottom of a subject.

With the library, then, of such vital importance to the graduate school, its policy and administration and the disposition of its funds are matters of perpetual and serious concern to all those members of the faculty who are interested in developing university work.

The graduate school must have its acknowledged place in the shaping and development of these matters. No single man as librarian can be expected to carry the burden of administering a growing library and to have at the same time a grasp of all the matters of educational interests involved together with an encyclopedic knowledge of the bibliography of scores of rapidly developing fields of knowledge. If any librarian thought he was capable of all this he should be lookt on with suspicion. Happily few modern librarians desire to be the autocrats of all that touches the accumulation and management of the graduate school's most necessary tools. Most of them welcome and cooperate with the library committees that represent the wider interests of the university in their relation to library policy and administration.

Two things at least are important from the standpoint of the graduate school in the formation of such committees; the first is that no good-natured complacency should, in a desire to placate all elements, let the committee be made up of representatives as such of departments and colleges. The committee should be small enough for efficiency, seven to nine members, and large enough to secure the necessary points of view of large educational groups into which university work may be divided. No man should go on it, except he be large enough to see the problems of the library as the problems of the university. Everywhere it is vital to the graduate school that matters be lookt at from the university standpoint and not the purely departmental, or divisional, or college standpoint, and

nowhere is this more essential than in the direction of the library.

The second point is that it is desirable that the graduate school, as such, have its representative on this committee—not because it is called a school, but because it is the real university and its representative should the more readily see and help the committee to see things from this standpoint. Library committees exist, not necessarily to apportion money, but to study all library matters as they relate to educational policy and to make on that basis any recommendations as to budget or administration that they can justify on the basis of such study. They will have final power in these matters and should have it only so far as their recommendations are conceived in the university spirit and backed by incontrovertible facts.

When it comes to the work of such a committee in making or recommending the expenditure of funds three things may be suggested to them as of interest in the wise development of the library and therefore of advanced work.

The first is the wisdom of putting at the disposal of the graduate school administration without conditions, as generous a sum as is possible. Somewhere in the university there should be a place or a person to whom the hard-prest individual scholar may go in the name of himself or his advanced student and get the money for the essential books which his share of a department fund may not obtain. If there be any better or more logical educational unit to whom the disposition of such a free unassigned sum could be entrusted than to the graduate school administration, let it be placed there. Its existence and wise disposal is the chief thing in which the university is interested.

The second point is that in the disposition of funds departments doing real graduate work have first claim where there is any margin over the minimum reasonable needs of undergraduate classes. This margin must exist for any university having a graduate school. It must not be wasted by giving it to the departments which have the most

instructors, the most undergraduates or the most disagreeable dispositions when they do not receive all they ask for or have been receiving by immemorial custom. It is remarkable how near you can come in a few years to making a collection of books look like a library if you shake a few stagnant departments out of their hold on considerable sums for books and transfer their expenditure into the care of live departments with an interest in advanced work and therefore feeling the necessity of buying the large, worthwhile things.

This suggests the third point of interest to the graduate school. If the two recommendations just made failed of approval before a library committee, the third would do much to redeem the situation. That is the establishment of what for want of a better term I should call a "sets fund"—a sum for the purchase as occasion may arise of great sets of learned publications as they may be offered on the market, and their purchase be justified by the personnel of the interested department or by the policy of the university in preparing for future graduate work in the field covered by the purchase. Very many if not most of these important sets are too expensive to be taken care of out of the current funds of an interested department. Their use may overlap several departments and yet the delay of getting the cooperation and contributions of departments may cost the university its chance to get what may not come on the market for another five or ten years. A "sets fund" would be a flying squadron to meet such emergencies. It should be rushed in wherever the opportunity was best and the need greatest.

These are some of the ways in which the graduate school should be given special consideration in the building up of the library. Passing from the financial phase as a matter of policy to what may be called merely matters of library administration, the interests of graduate work are not less but rather greater than the interests of others in such library matters as cataloging, exchanges and ordering.

A system of cataloging that separates on some antiquated classification literature that should be massed together, sets of single purpose, and material of the same character, is more than an annoyance—it is an actual hindrance. To find Domesday Book next to the reports of the city comptroller of New York, works on institutional and constitutional history separated by two stories from the national history to which they belong; Bismarck's works next to John Adams because both are "works of statesmen;" Animal Psychology next to the herd books of the Animal Husbandry Department—such blunders do more than disturb academic peace of mind.

Any library with a well-developed and efficient exchange department can furnish most encouraging statistics of what may be done in accumulating valuable material by the proper distribution of the university's own publications. Whole literatures in certain fields may be enriched to the value of much more than the salary of an active exchange librarian. Any efficient librarian appreciates this, but to help him realize the opportunity no force should be more effective than the support of all elements in the university interested in graduate work.

The graduate school is as much interested as the order or cataloging department in the library's subscription to the numerous sets of catalog cards of their possessions and acquisitions being issued by the great libraries of this country and Europe. In the keen hunt for rare or much-needed material upon which the work of some professor or advanced student may depend, the order department and the whole question of buying passes beyond the bounds of an administrative detail of the library. In state universities the increasing tendency, comprehensible and generally justifiable to centralize and supervise all expenditures by the state, tends to delay and complicate the ordering of all supplies, especially of books. If a bid on an auction sale has to go from the order department to the comptroller's office and take its place in order of precedence with req-

uisitions for paving material, telephones and chalk, the auction may be a thing of the past before a university bid has untangled itself from the red tape of the clerical routine. In the larger matter of placing orders abroad, great libraries and rapidly growing libraries must in the near future pass from European agents doing a general business to the consideration of the question of maintaining or sending their own agent either alone or in cooperation with other libraries. This has been done and done successfully. The development of the method and its practicability for individual members or groups of members of this association spending tens of thousands of dollars on books makes in itself a subject for special discussion of prime importance to any institution, especially those whose libraries are just reaching the point where graduate work can be done with their support.

The subject of ordering books is but the mechanical part of the larger phase covered by the policy in buying. The interest of the graduate school is in the reasonable accessibility of the necessary books. That may be secured for practical purposes when a long run of a rare periodical, a first edition or a valuable set of source material is in the local city public library or in the library of a neighboring university. At present too many universities are buying without due reference to the neighboring collections. Four or five universities within a radius of a hundred to two hundred miles of each other in both eastern and middle western sections are bidding against each other, paying higher and higher prices for rarely used sets to which occasional access is necessary, but sets of which one or two in a section would by the courtesy of interlibrary loans supply all needs.

The matter of competing in single purchases as between libraries that should be cooperating is significant of a more expensive competition into which we may be led by imitation or the zeal of departments. I hesitate to name the universities whose libraries—irrespective of their faculties—

furnish "unrivaled facilities for studying Western History," the list of these "strong in the pamphlet and other source material of the French Revolution" is equally extensive. The next decade will see us bidding and building against each other for South American and Oriental history, politics and literature—not a selected country or period or phase—but all South American and the whole Orient. All the middle western and perhaps the eastern universities may have to check influences within and without that would want to make them the greatest centers for the study of the history, literature and institutions of all the countries which have contributed large numbers of immigrants to the tax-paying population of their section. All this means spreading out—horizontal distribution of funds—mediocre results at greatly enhanced expenditure.

Is it wise or necessary or possible for all universities to be all things to all advanced students? Isn't the responsibility and the necessity upon most of us to be respectable in our library equipment in all the fields—where the personnel of the faculty justifies work for the Master's degree; to be good in what our location or traditions or special departmental strength justifies and to be the best where all these three combine and make us the logical place where library excellence is to be expected? Should we not make our special treasures immediately available by special bibliographies, by generosity in interlibrary loans, accepting commissions to photograph or copy whenever the demand is made and the expenses paid? Then in those fields where we are wisely and respectably mediocre let us depend upon loans ourselves and send our students on to the greater opportunities that offer elsewhere in the fields where we have determined not to be a claimant for preeminence.

This digression from the subject of ordering to the subject of buying leads to what is a more pressing and evident library problem in the waste of funds thru intra-university or departmental rivalry and departmental autonomy.

The most constant departmental assumption is that books and periodicals bought on its suggestion from university funds become by storage in seminary rooms irrespective of use *their* property. Regents and trustees are constantly doing what they call "establishing new departments." That is, they give some new appointee a salary and a title. The literature of his subject as one of the most expensive parts of the equipment is rarely provided for by additions to the library budget. He gets a small assignment from existing funds. Soon the new department is ready to develop graduate work, but it must have, simply *must* have *constant* access to sets already owned by the university and deposited about the campus in college or departmental libraries. Now most of these new departments are as sciences the result of combining certain phases of older sciences, or offshoots of one, or attempts to synthesize the work of several. The new department may therefore comprehend in its necessary literature the fundamental literatures of several disciplines. What is to be done in such cases? Shall other departments stand still in their library progress until the necessary duplication has been accomplished? In a certain sense this has been done in some universities and universities that once had ample funds for strong departments find that for some reason that tho they are still buying books they are making no progress as a library. Illustrations of how this works out can be supplied by any librarian or interested university administrator.

The social sciences duplicate the things all need. Sociology arrives as the newest of the group and proclaims that nothing that touches man is alien to its interests and its literature; chemistry, physics, mathematics are all interested in the same great society publications; the biological sciences are clear as to their departmental interests, but not as to there being any costly set that should be distinctly available for a sister department; plant pathology or animal ecology if erected into a department

can show cause for supplying it with all the literature of parent sciences, and the colleges of pharmacy, agriculture and engineering are surely threatened with extinction if they can not have college libraries of their own, which house and supply at university expense what is a half block away in the central library or some departmental library. Now the necessity of all this dissipation of funds has enough vigorous defenders so that I have never felt that they needed my support, and the stronger they make their argument in the name of specialization and advanced work the more uncertain I grow about their grasp of some of the essentials in the university work of developing specialists who know their specialty because they know it in its relations.

From the standpoint of graduate work and wise expenditure of money in development of its library facilities the departmental distribution of books, as a policy, is a serious disadvantage. The interests of graduate work are, it seems to me, best subserved by a central library where there is available under ordinary circumstances all that the university can offer in library equipment. Second: there should be in the various laboratories and departmental study rooms the most needed and constantly used reference works of any special discipline. Third: there may be in it the literature, more limited than departments suppose, which relates solely or primarily to the field in question. I should not hesitate here at justifiable duplication making the burden of justification heavier when the choice had to be made between a duplication and the possible purchase of that which was nowhere available on the campus and of interest to more than one department. Fourth: books or sets of too great value to be duplicated or of interest to several departments may be deposited from time to time in departmental libraries.

It would be possible to pass thus from point to point in all that relates to the library and indicate at each point how distinctly in view of the central position of the library, the interests of the university are involved. The essential

thing is that they should be treated as university matters, not the domain of the librarian or the department alone. The most hopeful thing is that the librarian who so regards them is passing. I have never yet worked with a librarian who did not deserve to be called in the best sense a university official, willing to work with other university officials for the common cause. I have never worked with university officials who were not alive to the importance of the library for graduate work. If there be such in places of authority, it is to be hoped for the sake of graduate and college work that like the librarian who was a keeper of books and an autocrat on policy, they may soon disappear.

Let me restate in conclusion that I have meant to treat the library solely from the standpoint of the university as manifested in the development and maintenance of well-equipped graduate work; that I have held that this university point of view will find more definite and sustained expression in a university library committee rather than in a library official or series of departmental or college committees. Further it must be evident that the views presented are, in most cases, applicable not to universities that count their accessible library resources by millions but rather have I had in mind those universities who conceal their modesty behind a library just rising into the hundreds of thousands.

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III

VOCATIONAL GUIDANCE IN HIGH SCHOOL[1]

THE PRELIMINARY PROBLEM STATED

This is preeminently the measuring age in which specialists are chiefly engaged in magnifying the glories of their office, but not its fruits. Vocational guidance is in that state of fluidity, a nebulous, intangible obscurity floating in a fog bank of platitudes, hard to get at and too slippery to hold. The real problem is to find a measure for the aspirations of a human soul physically, morally, spiritually, socially and economically that will fit it into the right vocation for life. But the light thus far shed on this subject is mostly darkness, and the currents are interrupted.

DEFINITIONS

1. In a brief discussion such as this, it is prudent to accept and recognize conditions as they are, and then to prosecute a further inquiry as to their genesis, and along what lines future development will probably follow.

An inquiry into the original meaning of "vocational guidance" will throw some light on one phase of the subject in order to a clearer understanding of the subject. Vocational is derived from the Sanskrit root "wak," and from which we have "vac" speech, and it comes down to us thru the Latin as "vox," which translated into English is "voice." The literal significance is the voice that speaks to one.

2. Guidance is from the word "guide" which runs back to the Sanskrit root "wid," or "wit," which means to see, observe, to know, so that turned into plain English, we have "voice-wit," or "speech-wit."

This hasty excursion back into the word roots of the past

[1] Read before the High School Department, St. Louis, Mo., November 7, 1913.

leads to the conclusion that speech-advising is simply telling one what he ought properly to do or refrain from doing. A better popular rendering would be the getting of wisdom and then acting prudently.

3. The present usage of the term "vocational guidance" somewhat loosely signifies that knowledge of the organization of such physical, psychological and social facts pertaining to a young person as will enable a mature person, having a broader insight of human nature and the world's industries, to direct the boy or girl into some proper employment with a reasonable hope that he or she will eventually succeed in that particular career. In a narrower sense as applied to the actual work of the school, it is the selection of suitable branches in a course of study best adapted to a particular pupil or a type of pupils. Some cities have vocational counselors or assistants to aid pupils in the selection of their studies and hand work; in others, surveys, partly educational, social and vocational, have been made as preliminary steps to such guidance. Guidance, therefore, takes two directions—training in general and training for jobs. General training, if possible, should always precede special training for job work. There is a vast difference between a preparation for life and a preparation for a job; one is permanent and the other is temporary.

HOW IT WAS DONE BY PARENTS

Since the days of Tubal Cain, the sons and daughters of men and women have been supposed to inherit some of the mental and physical qualities of their direct ancestors, and that their offsprings had wit enough to learn under guidance to do the thing their parents did. This is still practised by people of simple habits of life generally.

When schools for training the intellectual and moral faculties were started among the advanced nations of the earth, the students were fitted more or less for certain learned and professional occupations, as they are now, thru general culture in college and universities. There was some vocational guidance in these seats of learning, which,

however, allowed considerable choice in the matter of selecting a vocation, but not of studies. Especially did bright young persons follow, to a very considerable extent, their inherent tastes. A broad all-round outlook is regarded as a better equipment for general work, than a narrow microscopic view of a very few branches only.

A PHRENOLOGICAL ATTEMPT TO FIT PEOPLE INTO OCCUPATIONS

Upwards of a hundred years ago, Francis Joseph Gall had expounded his views on the subject of phrenology before many people in Vienna. This doctrine is based on the theory that there exists a certain relation between the several faculties of the mind and particular regions of the brain, and that these regions are the organs thru which the mental faculties manifest themselves. The brain, as a whole, is the organ thru which the mind acts. Under modern investigations this doctrine is known as that of localized brain areas. Specific functions is only a modified scientific form of which Gall, Spurzheim, the two Combes of Scotland, the Fowlers of America, in a crude way, had endeavored to formulate as a scientific interpretation of human nature. Whether the brain is a map of the man is still an open question. The phrenologists took cognizance of the temperaments of people so that their delineation of human nature really assumed the character of a scientific physiognomy of the human species.

As practical interpreters of human nature, there is no doubt that the Fowler Brothers, Nelson Sizer, and S. R. Wells, of this country, were among the foremost in that art, that the world has yet produced. One of their specialties was the ability to tell parents after an examination of a child's head, body and temperamental conditions, what vocation in life he ought to follow; also to tell grown people what occupations they would succeed in. They often hit the mark exactly in telling men and women in what pursuits they were engaged, or in what lines of work they were best qualified to act.

To arrive at safe conclusions, they took into consideration, "the whole structure of the subject examined, including the shape of the head, face, body, limbs, color of the hair and eyes, and all physical and temperamental combinations."

Notwithstanding the imperfect development of the subject and the valid objections to the pretensions of its advocates, it possest a quasi-scientific basis far in advance of any method yet proposed in these later times. Any scientific basis that aims at exactitude must take into consideration the brain, the nervous system, and the bodily structure of the child in order to determine what kind of work it can do. This field is practically an unexplored region at present. That such an analysis and classification of a boy's or girl's mental and physical powers are essential, indeed necessary, for his success in a career demanding knowledge, skill and motives for entering upon and prosecuting successfully any vocation—is absolutely necessary—if this phase of inquiry is to assume a standing on a scientific basis.

THE PRESENT SITUATION

The statistics tabulated from different sources in this country agree that children who enter the industries are usually about fourteen years old. There is a prevalent belief that if not taken out of school before sixteen they have past the period when a trade appeals to them. Many of the native born mechanics began to learn a trade about their fourteenth year, and this fact confirms the general impression of the public. Of a hundred children employed under sixteen years of age, only about twelve are in a position to learn a trade. A large majority of the others are employed in such occupations as stunt the mind and body. Very many become newsboys, errand boys, elevator boys, drivers of delivery wagons, etc. These low occupations unfit them for more desirable and gainful occupations. Here is one of the greatest wastes in human life. There is no other form of waste of our national resources that is

comparable to this. The children from fourteen to eighteen years of age must pass thru this crucial test which has not been provided for in any adequate manner by legislation or otherwise. This is the critical period during which children may become productive members of the community, or a menace to the state.

In our so-called trade schools, out of some 303 occupations, in which the workers of the nation are employed, thus far have restricted their operations chiefly to some woodwork, bricklaying and plumbing, and metal working, a little printing and gardening for the boys, plain cooking, and planning of fancy dishes, cutting, fitting and dressmaking, millinery, typewriting and shorthand for the girls.

The welfare of our working people and of the nation is at stake, unless some plan is devised to block the passage thru which so many of the boys and young men of native ability drift into a very low grade of unskilful work. A low grade output of raw material causes an increased cost of production and stationary or diminishing wages as measured by purchasing power. It looks like our national appetite, or power of consumption, has rapidly outgrown our capacity for the production of the necessaries of life. Population is outrunning the means of subsistence, bringing us face to face with one phase of Malthus's theory. A more productive method of agricultural and stock-raising industries will tend possibly to level down the cost of subsistence. An issue is squarely presented to the educators of this country to meet, in a large way, the duties violently thrust upon them. The means thus far employed are inadequate, reaching not more than one per cent of those who should be trained for skilled labor. The latest available statistics dealing with the occupations of persons over ten years of age show definite work for 80 per cent of the males and 18.8 per cent of the females. That is, four-fifths of the males and one-fifth of the females are employed in paying occupations. In 1900, there were 600,000 carpenters in the United States, 277,500 painters and var-

nishers, 97,785 plumbers and gas-fitters, 290,000 iron and steel workers, 155,147 printers and pressmen, 364,884 dressmakers, 87,849 milliners, and 50,717 electricians. The number engaged in agricultural pursuits was 10,381,765; mechanical and manufacturing activities 7,085,309, 42,326 wholesale merchants, and retail dealers 790,886; transportation 582,150 employes, and in personal service 2,577,957; 1,560,721 saloon keepers, and 1,455,677 servants and waiters. These startling figures show what a pitiful field in the special industries vocational guidance has to offer to the child that wants to become a skilled workman. Comment is best exprest by the unspoken.

AN EFFORT TOWARD GUIDANCE

At the outset, it is legitimate to inquire, what are the qualifications for guiding boys and girls into the kind of work each is best fitted by nature to do? Are there any signs that will enable one to tell in advance what career a pupil is qualified to enter upon? Of the million and a half of the boys and girls in our high schools and the eighteen million in our elementary schools, nearly all of them will soon enter the industries as workers or leaders, and that our most valuable assets in the country are these young prospective citizens. All depends upon their general knowledge, intelligence, industry, skill and constructive ability. It is not only for the high school particularly, but for all upper grades of the elementary schools that vocational guidance must be considered.

QUALIFICATIONS OF THE DIRECTOR

The Director or Counselor should be a good scholar of broad and liberal culture and possess a theoretical and practical knowledge of the larger lines of industry of the vicinity in which the school is located. He should have been connected with business of some kind a sufficient length of time to understand mercantile, manufacturing and other industries from the standpoint of the employer and the employe. He should be able to give advice on how

to eliminate waste in work and in material. This knowledge can be acquired only thru actual experience. Granting that this Director is thus equipped, yet he may be utterly ignorant of the mental, moral and physical qualifications of the one who seeks guidance. The supply of competent guides so far as I have yet heard, or read, is a waiting and wanting commodity in the market. Principals and teachers are capable of directing pupils in their studies in school. That part of guidance is fairly well done. In a general way, there are personal qualities or characteristics that bar some persons from engaging in certain occupations. Elementary teachers may make mistakes in regard to advising pupils to take, or not to take, certain subjects in high school. When advice is sought and is given thus early in life, the elementary teacher should have a general conception of the different courses offered in the high school the pupil expects to enter. Such advice is for four years only, and yet it has a bearing on the whole life of the child. To know a pupil's ability, to meet all the requirements of a high school course, and to avoid some waste, is well nigh impossible. The difference between shop work and scholastic work is so great in kind and output that there is no necessary connecting link between them. The one is chiefly concerned with a material output and the other with the development and culture of an expanding human soul. Notwithstanding all that has been said and the uncertain direct progress thus far made in vocational guidance, yet everywhere on the anvil is being hammered out by blind impulse a sort of workable method that will result in something valuable eventually.

Flippantly enough we advocate the adaptation of the school work to the daily vocations of the community, but when it comes to picking out the boy or girl for the job and fitting him or her into it without fail, a new revelation is needed.

THE LAST ANALYSIS OF THE SITUATION

In the last analysis, the question is how to pick out the

high school boy or girl and fit him or her to a life-long job. This narrows the question within simple limits. On this point an interesting investigation was made by the Massachusetts Commission on Industrial and Technical Education which tabulated information of over three thousand families of the state whose children had quit school to go to work.

Upon inquiry it was developed that sixty-six per cent of these families could have continued their children in school; thirty-three per cent of these children were found in unskilled industries; sixty-five per cent in low grade industries, and less than two per cent in high grade industries. The boys left school usually for a job, not to learn a trade. All sorts of attractions, usually of a temporary nature, had appealed to them and they had drifted from one thing to another. This is a waste pure and simple from whatever standpoint it is viewed. Our country is not alone in this aimlessness, since investigations in Great Britain show the same facts. The usual places of loitering, after leaving job after job, are on the street corners, in pool halls, around bulletin boards on which advertisements are posted for laborers, or in looking over the daily want "ads" in the morning and evening papers. If this condition be transferred to the high school pupils, the facts are not materially changed.

Vocational guidance has its problem clearly stated, as the writer sees it, and here the work must be done. What reply can it give? If there is a right way, or something better than the tentative plans that have been half consciously evolved, it is time they be set forth. Some high school teachers having learned what vocational occupations offer probable openings to young persons, and knowing their wants and capabilities fairly well thru frequent interviews with applicants, employers and managers of labor, have succeeded in placing some worthy boys and girls in good positions. Small booklets containing information in regard to certain industries carried on in a city

and the opportunities for advancement—the volume of business of various kinds and the requirements for each kind of labor—would give a sort of piloting chart to the teacher, parent and the child, a basis upon which a special line of work might be chosen congenial to the child and to which he is fitted. Whatever is done here to aid the child, his mind ought not to be directed away from the continuation of school work after once quitting the schoolroom. This plan simply places facts and conditions before the parents and the child with the supplementary information pertaining to specific lines of work. An observant teacher can tell with some degree of certainty what particular lines of work a pupil is likely to succeed in doing. But this is what people have always known, and the child has often turned by his own impulses to undertake certain things. The sketch outlined is a sort of triple union including the parents, teacher and employer to prevent the boy's becoming a drifter, so that he may become a skilled workman and a learner during his life. This is the aim of intelligent citizenship. It appears to the writer that this new profession has to be created, and its duties defined, if it is to be advanced beyond the handling in an empirical way. The first qualification of such a specialist is to know human nature as he sees it in the raw, and what it can be trained into doing most successfully among the 303 different occupations in which the American people are engaged. The preliminary knowledge must include the physical, moral, intellectual, social and economic phases of the applicant's equipment and constructive ability potentially for success in a particular line of work. A complete inventory of the child's possibilities, including his potential stock of brain and hand power, ought to be made upon a basis of scientific accuracy. This is the personal equation demanding investigation in all its varying factors. There is no special department of human nature in our universities now that is competent to deal with this subject. Such a department ought to be created.

In the fields of employment, under modern strest conditions, shifting and changing and displacements are constantly occurring. Restlessness and economic waste abound on every hand. One is tempted to ask, what is the matter when everybody complains? Beginners usually see just ahead, if diligent and improving in their work, to a chance for better wages which acts as a stimulus for a time, but not always when changes and strikes and lockouts are common. The employers of labor value permanent and progressive and improving employes. All these factors should center about one who enters an occupation with the view of becoming an efficient worker and wants to be weighed by the employer, and to weigh himself by his own ideals. To fit the boy or the girl to the job, or the job to the boy or girl, there is the rub, and it is still rubbing.

WHAT NEW YORK CITY IS DOING

A statement from New York City will throw some light on the practical working of high school vocational guidance. It is entitled Report of the Students' Aid Committee of the New York City High School Teachers' Association on Vocational Guidance. The aim of this committee is to aid deserving students to secure employment during vacations and out of school hours in order to earn a part of their support; to advise those who are ready to leave school in the choice of a vocation; to direct them how best to fit themselves for their chosen vocation and to assist them in securing employment which will lead to success in those vocations. This statement is clear and comprehensive, and is everything that could be expected from the teachers' standpoint.

Here is another very interesting fact which is perhaps the most important one in connection with the whole question involved, and it sparkles brilliantly in an unexpected quarter. Observe the fact. Ten thousand pupils left the New York high schools to seek employment in industrial and commercial fields, and less than ten per cent of the ten thousand sought the advice of the committee in securing

employment. This tenth was evidently the most helpless. The committee further reports that four times during the year the list of applicants was practically exhausted. The meaning of this is that all the high school pupils had found employment. But a report of one hundred and ninety-three representatives of labor unions showed that sixty thousand, or twenty-eight per cent, were out of employment, while a canvass of all the eleven hundred students of an evening high school showed that only three per cent were unemployed.

The significant fact is that of the pupils, more than ninety per cent had helped themselves to find positions, and that they obtained work and held their jobs, and that the committee, thru conferences with employers of labor, had succeeded in placing those who needed their help. Whether the work will be better handled by specialists, looking at the subject from a narrower vision, who will do as well as the teachers who sized up pupils from the kind of school work the pupils did daily, is a question that time only will determine. The tendency at present is in the direction of specialists for all kinds of work that many common people can do as well. But the most recent investigation, made in New York where this particular kind of work has received the most careful attention, is to the effect "that there are no jobs for children under sixteen which they ought to undertake."

Another conclusion is that "a study of the facts of industry is, therefore, the only sound basis for discovering what type of industrial training—whether pre-vocational or continuation schools—should be attempted."

Most people go thru life indifferent to its great purpose acting under the impression that things will turn out well, or at any rate, better in the end. It is a truism that every one can not do everything, and yet the recklessness with which vocations are happened into, is one of the queerest corners in individual history. So often interest lies in one direction and the work one does in another. To face this

problem in a manly way is to ask what is it, what is its purpose, its full meaning and the underlying principles upon which it is based, and how can these be put into successful operation and reduced to a working test? If it is a question of human knowledge, it has been developed out of human experience. No knowledge is possible outside of some sort of life experience. The content of any science is simply an embodiment of human experience arranged on a scientific, or semi-scientific conception for thinking and working purposes. Life leads one to a point where one begins to reflect or think about his knowledge, and when the young person has reached this condition his case is hopeful.

(*a*) As a general statement, the one who is just a specialist is a narrowist, and sees only in one straight line just before his nose.

(*b*) The greatest thing a boy or girl can learn is to do one's duty cheerfully, even when it is unpleasant.

(*c*) That a young person, who is placed in a wage-earning position, should be followed up by a systematic oversight with the same care as he was in his behavior and studies in the upper grade work in the elementary and high school.

(*d*) He should do his present job so well that those who inspect his work will advance him to a bigger and a better job.

(*e*) He must accustom himself to pull hard against the collar whenever necessary, and not grumble.

(*f*) He must continually increase and solidify his knowledge and grow in it every day.

(*g*) As a man he must be bigger than his job, however large it may be. If one is settled on the bed-rock of right, duty, obedience, industry, and keeps a good aim before him and lives up to it, he has no need of a Regularly Certificated Vocational Counselor outside his parents, immediate teachers, and a safe business or professional man from the outside.

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IV

MATHEMATICS FOR CULTURE

One morning in September of any year in the last half century, the dean of a large American university escorted a bright looking freshman into the office of Professor X, the head of the department of mathematics. "Professor X, this is young Mr. Jones, who wishes to consult you about his work if you can spare him a few minutes."

After being assured by Professor X that he was very welcome, etc., Mr. Jones was requested to state his case.

"Well, you see it is this way. I came to the university just to get an education. I am not aiming at any of the professions. In fact, I do not know what I am going to do. For one thing I am pretty sure that I am not especially clever in mathematics, and, to tell the truth, I don't like the idea of doing any great amount of work in it, but my father tells me that mathematics has been of very great importance in the development of our civilization and I should like to know something about it. I have studied algebra and geometry and did not see much sense in either. But if father is right, I should like to get just enough mathematics to see why people invented such a study, and to get some notion of what it is for."

"Now, as I understand the case," said Professor X, "you are presenting for entrance the minimum requirements in mathematics. That is, you have had elementary algebra, and plane geometry, but not solid geometry or trigonometry. In that case you should begin by taking our course in solid geometry, two hours a week for one semester. At the same time you could take trigonometry, three hours a week. Your course the second semester would naturally be college algebra two hours and analytical geometry three hours. In your sophomore year you should plan to

take either our three- or five-hour course in calculus. To get some idea of what mathematics is for, as you say, you should really take the five-hour course. After that you can proceed as you find your taste and interest developing. But to attain your purpose, the course I have indicated would be quite indispensable."

The above dialogue is intended to give a fair indication of the advice which, under the circumstances, would be given to a boy just entering an American college. If this imaginary dialogue contains anything misleading it is the suggestion that there are many boys making the demands upon the university which this boy makes. Among boys having his dislike for mathematics, the normal inquiry would be as to the minimum of col ege mathematics which would admit to a degree. But even if the demand he makes is unusual, it is contended that it would be consistent with the very highest purposes, that indeed it would indicate a higher order of self-direction and even of intelligence than a mere willingness on the part of a student who likes mathematics to go on studying it with no other purpose than simply to follow his own bent.

Surely, it is a fair question whether there is not as much that is conducive to culture in knowing permanently a few of the great results of mathematics, how these results have helped to build our civilization and to know something about the historical conditions which made their discovery possible, as there is in making a detailed study of several subjects—a study involving proofs of scores of theorems and the solving of hundreds of exercises.

It is the belief of the writer, therefore, that the advice given by Professor X is not the best that could be given. It is believed that the demand of young Mr. Jones requires the creation of a new type of course in mathematics which we will call culture mathematics. The purpose of this paper is to describe such a course. It would deal with the subjects of trigonometry, solid geometry, analytic geometry and calculus.

The three theorems in geometry on the congruence of triangles show that if certain parts of a triangle are given, the remaining parts are thereby fixt. Thus, if the two sides and the included angle are given, the remaining parts of the triangle are determined. However, plane geometry furnishes no method for computing these unknown parts. Similarly, two angles and the included side determine the remaining parts of the triangle, as do also all three of its sides. Here we have, then, three definite problems suggested by plane geometry, but not solved by it. We next inquire whether these problems are worth spending time on. A consideration of the difficulties of finding the distance across a deep valley or a lake—the general problem of surveying a large tract of mountainous country such as the Rocky Mountain region will soon convince us that *indirect measurement* is of the very greatest importance. It would, indeed, be difficult to over-estimate the importance of the revolution in thought which came about partly thru the information about the comparative sizes of the earth, moon, sun and the other planets, their distances apart, and the general arrangement of the solar system, all of which was obtained by means of indirect measurements effected by the solution of one or more of the three problems just described.

One of these problems would now be solved, viz., given two angles and the included side of a triangle to find its remaining parts. This would require the definition of sine, the development of the law of sines, and the use of a table of natural sines. Problems for actual work outside of class could be assigned. The mathematics involved in surveying a large tract of land by measuring one line with great care and then triangulating for a hundred miles would now be fairly within the student's grasp. The student would then be told that other functions of the angle similar to the sine are defined in the regular course in trigonometry and the remaining two of the three problems solved. Something would be given about the history of

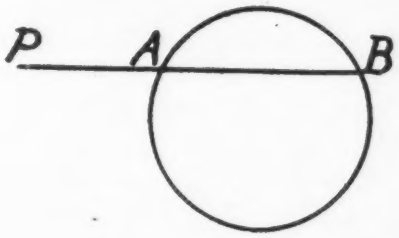
these problems and their solution. The first solution by constructing a triangle equal to the one given and measuring it directly, then constructing a triangle similar to the one given and measuring it, and finally making use of similar triangles to obtain the sine and constructing the table of sines is a fine example of how the human race has made its conquests by slow degrees. The student would be told about the difficulty involved in working out a table of sines, etc., and when these difficulties were overcome.

This would end the study of trigonometry. The net result would be that the student would know about several very important problems solved by this science and the solution of one of these great problems would be quite thoroly known. He would know why these problems are important and would have some feeling as to what it would mean if their solution had never been affected.

The point which the writer is trying to make is that for the purpose of general culture this mere glance at trigonometry itself, together with a more detailed view of some of the problems which it solves and their importance, is to be preferred to the courses usually given. The net effect upon the student of an ordinary course in trigonometry, is a vague feeling about a hazy procession of formulas —about one hundred of them, none of which he long remembers. The work of obtaining all these has been so arduous that their general human value has been lost out of sight or at least has been very much overshadowed. As a whole, its appeal has been as mere bookishness that can not possibly be of interest to anyone except a specialist. True, he has done some actual work in deriving these formulas and in applying them, but if it is work for work's sake which is desired, then the course proposed here is just as good for it would contain as many problems for solution as one could reasonably ask of a student in the time given for it.

A treatment similar to that given to trigonometry would be accorded to the other subjects. Solid geometry would

be introduced by a certain kind of review of plane geometry. The purely practical character of Egyptian geometry and the highly theoretical character of the Greek geometry, of Euclid, would be pointed out. Some practise would be given in pure deduction by giving a set of assumptions for plane geometry, far richer than is logically necessary and then deriving a few theorems rigorously from them. The historical development would be studied—the excellence of the geometry of Euclid, the interesting facts about the treatment of parallels down to Lobachevsky, the modern introduction of order into geometry, an account of the theorems which Euclid could not prove from his assumptions, etc. Some of the most important theorems in geometry would be pointed out and their significance explained. The need of pointing out the meaning of theorems is made evident by the following incident. In talking to a class of teachers recently, the writer remarked that there are many theorems of geometry which are truly remarkable. Thus, if P is a fixt point in the plane of a fixt circle, and if the line AP in the figure is swung around the point P as a pivot, then the product PA $\times$ PB is con-



stant. A man who said that he has taught geometry for six years at once remarked he did not see why this statement was true. His remark was immediately seconded by several other teachers of geometry. We are too prone to forget that a very good share if not the chief share of the business of even the professional mathematician is to know important theorems and to know why they are important.

A course of the sort under consideration would, of course, admit of much variation. A useful treatment of solid

geometry might be to review certain theorems in plane geometry, and then to state without proof the corresponding theorems in solid geometry. Many of them are given in our grammar school arithmetics anyway, so there would seem to be little harm in repeating them, even tho the proofs were not given. Thus the theorem on the area of the rectangle has as its analogue the theorem on the volume of the prism; the area of the triangle would lead to the volume of the pyramid and the cone; the length and area of the circle would lead to the surface and volume of the sphere. These theorems might be rendered evident to the understanding in some such informal manner as is now done in the texts on arithmetic. Problems involving the use of these formulas could be assigned for solution. True, the formulas have not been proved. But why should everybody who knows these formulas and uses them repeat the proofs? The proof of the law of gravitation has been reproduced by very few. Indeed, it is a question as to whether any one person can reproduce the proof of it which we now have. But we all know the law of gravitation and use it and are none the worse for it.

The theorems on the areas of similar plane figures and the volume of similar solids are of such fundamental interest and meaning that one can not escape them when once they are understood. The areas of corresponding cross sections of similar solids are in the same ratio as the squares of their corresponding linear dimensions while their volumes are in the same ratio as the cubes of these dimensions. Here lies a great difficulty to be overcome in increasing the size of any structure whose shape depends upon the cohesion of its parts if, indeed, it does not absolutely limit such size. The sizes of trees and animals, of structures on land and sea are all limited by the simple but far-reaching fact, which is exprest by these theorems.

Would it not be worth while, too, to note what is meant by such a theorem or "The square on hypothenuse of a right triangle is *exactly* equal to the sum of the squares

on its two sides." We know that in measurements there is no such thing as exactness. All that can be done is to assign a certain magnitude, + or — so much, giving the limit of error. From one point of view the *exactness* of this theorem may be interpreteted as a prediction that in any measurement which may be made the theorem will fail of verification by less than the limit of error in that particular measurement. When Pythagoros discovered and proved the theorem for the general case, the instruments and method used in measuring were vastly cruder than those used at present. Nevertheless his prediction has held up to the present and one may feel safe in predicting that it will continue to hold when measurements are made even more exact than at present. Indeed, there seems to be something *a priori* which transcends all measurement. Is this not a wonderful fact? What is the real explanation of it? Is it not worth while to raise such questions even if they are not answered? Is it not as well now and then to give young people something to reflect on, something to dream about, as it is to give them something to grind on?

Analytical geometry would begin with a review of the graph already studied in the preparatory school. A fuller treatment of the graphical representation of statistical information would be given. A rather complete collection of charts representing such data in actual practical use would be of interest. The notion of the graph representing two variables connected by a functional relation would now be obvious. The graphs of the first, second and third degree algebraic function would render the application of algebra to geometry evident.

The straight line and circle have already been studied in the preparatory school. The equations of the ellipse, hyperbola, and parabola could be written down and the general nature of the curves investigated. The equation of the sphere could also be introduced. The whole thing would amount to what is sometimes called graphical algebra.

The treatment of the tangent of a curve would lead to

the notion of derivative. The student would learn to actually differentiate algebraic polynomials—to find maxima and minima and to solve problems depending on these. As an introduction to integration the derivative could be regarded as given the rate at which the dependent variable changes with respect to the independent variable. The problem of integration would then be: "Given, the rate at which $f(x)$ changes for each value of x between $x = a$ and $x = b$, and also the value of $f(x)$ for $x = a$, to find the value of $f(x)$ for $x = b$." A little reflection based on a mere commonsense apprehension of the meaning of the words used convinces the student that this is a real problem. Its solution by finding the antiderivative is then immediate. We should simply find a function which has a given rate of change. Of course, no attempt is made to prove that there is only one such function, tho it might be stimulating to mention that such proof is required in a rigorous treatment. By means of the antiderivative we should then be able to solve any problem when the rate of change was given—provided we could integrate. It would be interesting to get up against problems now and then which we could not solve because of the presence of such a simple expression as a square root or a sine. Such problems would have to be past with the remark that we could solve them provided we would take time to learn to differentiate expressions of this sort. We should now be able to find areas, volumes, pressure, work done, centers of gravity, etc.—problems which would be insurmountably difficult without the calculus. By this time we have a rather full statement of the problems which lead to the use of the calculus, historical and biographical notes, etc. The general scheme of the elementary calculus would be known. The question, what is it good for? would be answered, and something would be known of the story of its origin.

This whole course would require about three hours a week for one year. It is believed that such a course would appeal to many who are not at all interested in the ordinary

courses in mathematics—that it would furnish an opportunity to acquire one element of culture which many now desire, but which either is not to be acquired at all in the ordinary course given, or which can be acquired only at the cost of two years of hard work—in many cases, very distasteful work. The course would find its *raison d'etre* in the belief that a general answer to the question "What is elementary mathematics and what does it contribute to our culture and civilization?" should be more readily accessible than it is at the present.

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V

SOME FALSE ASSUMPTIONS IN EDUCATION

In a series of tests made on about 2,000 subjects it was found that not one out of 500 estimated, by a drawing from casual memory, the exact dimensions of a dollar bill. "Not one in twenty could reproduce six simple words in correct order immediately after writing them, in case they did not know beforehand that these words were to be reproduced. It was a rare exception to find a subject who could represent the figures on a watch dial unless his attention had been previously called to the nature of their arrangement. Fewer than half the subjects tested could associate the correct year with events most familiar to them. About half the individuals tested correctly estimated the number of letters in their own names."

The results of these experiments emphasize the fact "that one's perceptions are in terms of experience and utility, and that associations are likewise formed and recalled in terms of these factors. Objects and events occurring together are not necessarily called up together, or in their relations, because they occurred together, but only when they are associated in terms of the useful by directly coming into the experience, or by being dragged into the experience while clinging to other nuclei of the subject's interest. This study shows, therefore, how meager is one's memory of the most commonplace objects, relations and events that were not in the central field of interest, or closely attached thereto, when they were presented to the senses. Moreover, one often has a mass of imperfect, fragmentary and unclassified perceptions which, when subsequently joined together in terms of experience, present conclusions which are distorted representations of the original stimuli. The manner in which these frag-

ments are interpreted will depend upon the individual's bias at the time of interpretation as well as his center of interest at the time of his original perception of them."

"The findings of this study seem to strike a blow at the common assumption that because a person does certain acts of work within a certain system, it necessarily follows that he has an intimate knowledge of the activity or system with which he is identified. For example, the sixth grade teacher may be an expert in her teaching activities, but this fact does not insure her expertness in the capacity of analyzing the problems and existing conditions of sixth grade work in general. These analyses may best be made by one who is free from the daily routine of teaching."

The conclusions of the above-named study in Incidental Memory have little comfort for the "cultural" claims of Greek and Latin. That the student who masters Greek and Latin well enough to freely speak and think in these languages, gets a culture and equipment unobtainable without their mastery is an undisputed fact but the belief that the average student, who spends just the few years in Greek and Latin prescribed by academic courses receives thereby much culture is a questionable assumption. To this type of student Greek and Latin are generally taught in a formal way demanding accurate translation and grammatical constructions with the assumption that the student will get the literary culture incidentally. But unless the teacher constantly directs the pupil to the content and the literary merit of the ancient classics the average student is merely learning a Greek and Latin vocabulary, with some skill at joining parts in line with formal grammar, but independent of a meaning for the time when the classics are first produced or the present time when they are studied.

Fortunately many Greek and Latin teachers have observed this difficulty and are putting emphasis upon the literary merit and classic prestige. With German and French the difficulty is less severe because most of the

French and German classics are attractive stories depicting types of modern life while Greek and Latin give us epic poetry and dry martial history.

In colleges and universities, and even in some secondary schools, it is the common custom for the several departments to require one or more class papers written on some prominent topic of the subject studied. The assumption is that in doing the necessary readings and in writing the paper the student is compelled by virtue of the work to grasp pretty thoroly the theme upon which he writes. The mastery of a subject that suffices in piecing together a fairly presentable class paper is no assurance that the subject matter has been woven into the warp and woof of the student's mind. If, in addition to the writing of the class paper its author were compelled to defend his paper, wholly or in part, before the class and made to know he must acquaint himself with what he writes, much of the students' time now often lost in writing ten-thousand-word papers which are frequently unread by teachers, would be spent effectively.

The belief by many that writing down a fact aids in its retention plus the desire for permanence of things we want for future reference, have led to the systems of taking many notes in class and in making long, involved and tedious outlines. The student who attempts to take very complete notes in class with the assumption that he will incidentally get the meaning of the recitation and lecture absorbs some fragments of cold facts oftentimes without a unified conception of the lesson presented. With so much necessary emphasis on technique in writing notes he can give little thought to what he writes. Such a student who does not recognize and interpret his notes after class may have notebooks full of trash and may pass thru courses without assimilating much of them.

The same is true of outlines so much emphasized in preparatory school and normal schools. When the making of outlines demands a systematic study, a real training

comes from their use, but the outline that consists almost wholly of enumeration too often attracts the whole attention to the outline as a mere skeleton. The mechanical features of the latter type of outline defeat the purpose for which it was written since its making does not assure the student's thoro mastery of the subject matter.

In our laboratories a fixt set of experiments is to be performed and carefully recorded; but the mere performance of these experiments does not assure the student's mastery of the principles involved, for many students work mechanically in the laboratory, write up their data mechanically, and pass the laboratory course upon the merits of their notebooks. If laboratory work is to serve its purpose the instructor in charge must see that the experimenter finds the various laws and principles illustrated by the respective experiments and further that the students knows just what experiments will demonstrate each theory of the text.

Textbook writers have generally placed reliance on incidental memory and observation. This is especially manifest in many history tests, which are written in almost wholly disconnected paragraphs with the belief that the child will naturally get the unified relations. (Barnes' History of the United States is a good example of this type of tests.) The boys and girls are set to work memorizing unrelated paragraphs of facts because the average teacher guided by the text, works upon this same plan. As a consequence, the unity and continuity of history, the evolution of society, and the real historic meanings are mist.

Casual travelers who make flying summer trips thruout the Orient and Europe return to tell their friends that this is a big, wide, wonderful world, but they have learned comparatively few and meager facts. The assumption has been that if one goes abroad he must naturally absorb a wide breadth of view and necessarily become acquainted with what he hears and sees.

The same is true of our attitude toward museums, exposi-

tions and exhibits. Since the things on exhibition are so perfectly classified and labeled it has been assumed that the visitor can not fail to get the information which has been so clearly and concretely furnished. The average visitor tries, within a very brief time, to see everything presented and feels condemned if he can not say he saw this or that when any other visitor mentions it. But while enumerated facts are casually acquired by such experiences the real information gained thereby is usually very superficial.

When the directors of our public exhibits will have realized how little casual memory and observation give to one's experience, rather than to have many things exhibited ineffectively they will have a few things arranged carefully. They will also provide expert demonstrators whose duty it will be to encourage the visitors to appreciate more fully the various exhibits. Most of all they will show people how to study an exhibit. Recent developments of this nature in the management of the Metropolitan Museum of Arts, New York City, are in the right direction.

It has been assumed that because the country boys and girls live in the wide open air among the hills and mountains, the running brooks and bird-filled woodland they must have a close acquaintance with the plants and flowers, the rocks and trees, the birds and beasts. The poet and visionary storytellers have almost immortalized this vain assumption. Some boys incidentally have become such close company to natural things that it were truth to say of their companionship with nature, "Hand in hand with her he walks, face to face with her he talks," but the boy that Whittier writes about is not a typical country boy. If he were, our country boys would all be naturalists and poets. The average country boy scarcely knows enough of natural things to understand and appreciate the rhyme recital of the "barefoot boy's" comradeship with nature. Not many boys see the flowers beneath their feet or the clear sky above them. The blueness of

the sky may only mean a weather signal, the wild flowers a weed to add more to the farmer boy's toil. The sweetest birds may come and go unwelcomed and unwept. Let anyone make inquiry at the average country home about the sweet-voiced and bright-plumed birds that flit among the trees which shade the country house. The meagerness of answers will astound him. Without a doubt the country folks of slightest culture do not fail to know the habits of the hawk that preys upon their chickens, of the crow that steals their eggs and pulls the corn just peeping thru the ground, of the thieving blackbirds that hasten twilight by their winged multitudes, and of the robin, the harbinger of spring. With such birds any country boy or girl is pretty well acquainted. The reason is quite obvious. They have a close relation to his strife for livelihood. He has an interest in them because of their direct or indirect utility. The sweet-songed choristers that sing while country folk are waking or chirp while they are falling off to sleep are little noticed or are totally ignored.

Nature is not always right. She is a mighty teacher but if left alone she often is niggardly in the breadth of her curriculum. The scholar and the man of moderate culture versed in poet lore, become almost ecstatic as they contemplate how the country folks must live in untold happiness because of what "nature teaches them." But many of the joys of simple country life and rustic scenes that poets dipict are seldom realized by country folks at all.

The country place is a great big laboratory such as man can not improve. The country boys and girls ramble freely in this laboratory; some incidentally make a few experiments, a very few ingenious ones learn to use the apparatus or a part of it. But for the want of guides and laboratory instructors the great majority of children wander here and there and never learn to use this apparatus, but in their attempt to learn they may break or mar some valuable pieces and at the end leave the laboratory with

the vague impression that it is a wonderful place but to them it has had little worth or real significance. We have been teaching our boys and girls from books and have assumed that they are learning nature incidentally. But they are not, and because they are not we need to inject into our educational system something that will compel the acquaintance of our boys and girls with the simple, beautiful world about them; something that will make the heretofore vain assumption of the fact a reality.

Furthermore we have assumed that children will naturally connect what they learn in books with real life but unless the teacher constantly reminds the student of the relation it will oftentimes be mist entirely. More than ever the teacher now is learning that he must help the pupil correlate and classify what the latter learns or tries to learn; otherwise, the student's information will consist of unrelated fragments that will gradually drop from his field of consciousness. Not merely the mode of teaching but the curriculum as well should be such that there can be no gap between real life and the school. Our leaders of education are just beginning to see the need of a whole school system that will make the boy and girl interpret all he tries to learn in terms of every-day life.

We are by nature mental sluggards. We naturally attend only to that which directly or indirectly interests us. Furthermore we purposely ignore and shut out from our experience what is not in line with our selected interests, hence the danger of over-specialization. We have assumed that we can have but one central interest. Quite true, but about this central interest can be clustered other interests *ad infinitum*. Our central interest should be an effective social life and then if we properly organize all other potential interests they can be clustered around this one central interest and then our knowledge will approach infinity.

We have assumed, however, that like a water pail the individual holds so much. If one thing fills him no space

remains for other things. Rather the individual is an unfolding unit with potential growth that has no known limitation. While careful observation and memory can not be expected to show transfer where new elements are involved, surely the habit of observing carefully and trying to remember things with which we have to deal in practical life are amenable to training. It would be well if from our youth we were compelled to organize our experiences and would always have to stand prepared to reproduce the content at least, of every sermon, speech or lecture, every bit of information given us by teachers and to describe every scene in nature, every exposition and exhibit that we have seen. And most useful it would be if we were constantly expected to evaluate all such experiences in terms of life's activities.

Natural instincts can not be depended upon to make us realize these possibilities. There needs to be purposive training and direction. It is the business of the school to give them, to see that the child habitually observes the things together which belong together.

Above all we need to realize that incidental memory and observation are very meager as compared with what has been attributed to them. Indeed "the great mass of incidental memory-content is useless, and may interfere with healthy thought processes in so far as this purpose is ignored. In the process of learning, then, the vital factors are the manner in which the stimuli are presented to the senses and the attitude of the subject at the time of their presentation. It is more important to organize the stimuli in their presentation than to organize subsequent perceptions of chaotic stimuli. Therefore the true aim of education should be to teach the child to study rather than to recite."

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VI

HUMANISM AND EFFICIENCY

Recent investigation has shown that there are wide discrepancies in the content, sequence and spirit of science courses thruout the country's high schools. That unanimity or similarity in actual content and sequence is lacking is not necessarily an evil, but that antagonism or at least absolute disagreement relative to the aim and motives of the work should exist is deplorable and makes desirable a discussion of our aims and ideals.

The content and sequence of science courses should be governed by social, geographic and economic conditions local to the school. Since these conditions vary from place to place, wide variations in subject matter are to be lookt for in different communities, and need cause no concern. The aim, on the other hand, of science courses or indeed of all educational courses should be single and should be determined strictly by the advanced ethical ideas of the national community.

A HIGH IDEAL OF COMMUNITY WELFARE

Community consciousness and idealism has entered practically every phase of life and has modified and remodelled manners and customs to an amazing degree. It has humanized the factories to the extent of decent lunch-rooms and rest corners; it has assailed property owners and has insisted upon sanitation and fire escapes in tenements; has cried out against favoritism in commercial life and has been responsible for government regulation. It has demanded and is securing child labor laws, decent dance halls, public parks, effective police protection; has penetrated society and implored assistance rather than scorn for the fallen woman, and equivalent moral standards regardless of sex. It is constantly knocking at our school doors and crying aloud the message of the age—the conservation of the

human element, the power of humanism over formalism is imploring us to impart within the school to prospective citizens the lessons which are disseminated so slowly outside the school.

Modern education may be divided roughly into three eras. In the first of these, education concerns itself mainly with the modes of expression between man and man, and secondly with a recital of man's warlike deeds. Verbal or written intercourse in the vernacular or mother tongue marked the uneducated man; intercourse in the classics, or at least familiarity with them was the stamp of the cultured mind. There was interest in the deeds of men, but these deeds were largely recorded in the classical languages and were available only to the learned. Science did not exist, vast industrial projects had not been conceived, glaring economic problems did not await solution, and social studies were undreamed of. There was little in this age with which the educator concerned himself except languages, literature and history. In time mathematics made a conspicuous place for itself, but always the criterion of education remained inflexible, namely, the extent to which the classics were known and used. This idea of education was the logical outgrowth of social and political conditions. Government was not democratic and the masses had neither political, educational, nor social rights. There was a small upper class and this was satisfied with subjects which served to intensify its aristocratic supremacy. As democracy slowly made its way, the masses began to participate in education, but the standards and interests once set up were not modified.

In the first educational era, the main subjects of study related directly to man alone. The subjects were called the humanities in contradistinction with the subjects which characterized the second era—the study of the earth, its multitudinous creatures and substances, its laws and forces. Geography, geology, botany, zoology, chemistry, physics, the sciences as they were called, mark the

second era in education. In it, acquaintance with the sciences as well as familiarity with the humanities became a criterion of education, a mark of social and mental superiority. The dissection of a frog, the microscopic study of minute plant forms, the molecular structure of rare chemical compounds, the calculation of intricate physical problems are types of the science requirements demanded of those who laid claim to education.

The aims of the first and second eras were practically identical, namely, the acquisition of knowledge for knowledge's sake, of education as a personal social asset, of mental development thru prescribed courses as the key to culture and professionalism.

The third era in education is that in which we find ourselves. Emphasis is laid not upon the study of man as man, nor upon the study of the earth as the earth, but upon the reciprocal relation of man and matter; upon their actions and reactions, upon the adaptation of natural laws to man, and the response of man to natural laws. Language, literature and history are not neglected in this era, they are lookt upon as the instruments by which the mental reactions of man to man, nation to nation, may become known. Science is lookt upon as the instrument to make known the reaction and the interdependence of man and matter, man and the lower animals. We have found by the application of science to man that mind is closely correlated with matter, and that malnutrition, for example, is responsible not only for physical inferiority but also for mental and moral deterioration. We have realized thru applied science that criminology is a disease of the community due to economic conditions such as strikes, war, famine, hard times, and to maladjustment of the criminal to changing environment. So illuminating has been the study of interdependence and reactions, and so revolutionary their effect upon man's thoughts and acts, that one can not forecast the possibilities of the future.

This age of the study of interrelations is justly called the

social and economic era. Man is recognized as a creature who can not, will not and ought not to live to himself alone; as a being who troubles society only thru maladjustment to its laws and those of nature, and as a being who benefits society in the exact degree to which he intelligently adjusts himself to his static and dynamic environment. Our task as teachers becomes instruction in the scientific side of environment, and the presentation of such natural laws and theories as are necessary to interpret the more important factors in the natural surroundings of the student.

Granting for argument's sake that we acquiesce in the demands of modernism for science teaching which will primarily interpret environment, and give a sympathetic understanding of surroundings, how shall we modify our courses? The child is father to the man, and if we can give the child an intelligent understanding of his environment during childhood or adolescence, we shall be giving him the best preparation for intelligent understanding from the adult's point of view. Our interests grow out of our knowledge and understanding, and if we can make the child acquainted with his simple environment, his interests will be stimulated and sustained to manhood and will enable him then to adjust to manhood's conditions. Science as an interpreter of personal environment is very different from science for science's sake; it becomes the tool by which the pupil works rather than the subject for whose sake he works.

Environment is complex and if it is to be interpreted symmetrically, all of the sciences are needed. It is for this reason that many teachers advocate a course in general diversified science such as will deal with the main scientific phenomena of actual daily occurrence in the pupil's life. What such a course shall include ought to be determined by local conditions. Matter of value and interest to pupils in a mining town would not correspond with that needed by children of an agricultural community, or of an

industrial center. But so long as most of us must look to good health as our main asset in life, and must eat, sleep, breathe, dress and economize, certain fundamental facts and laws ought to be incorporated in every course regardless of locality. Some or all of the following might form the foundation of such a general science course: prevention of epidemics, spread of disease by flies and mosquitoes, sewage, protection of city trees, care of plants in the home, dangers from garbage, and hygienic need of parks and playgrounds; foods and their nutritive value, economic management of the gas range for cooking, detection of adulterants in common foods, government inspection of meats and milk, use of thermometer in the home, fuels and their efficiency, removal of stains, use and misuse of light, household heating and ventilation, water and gas pressure in the house, analysis of water and study of local water supply and the filtration system, labor-saving devices, etc.

Such a diversified course awakens the child to diversified interests, and arouses in him the spirit of adaptability; it shows him that not one but every phase of his environment is governed by laws, and it also suggests to him the ways and means by which he can adjust himself to the varying phases. Good teaching consists in utilizing old experiences in creating new experiences, and one of the important consequences of such a diversified general course is that past experiences of particular interest to particular children will inevitably arise and form the basis of new interests of lasting value. The cumulative value of such a course is enormous; the child moves perpetually in an environment which needs interpretation and hence he frequently applies the known to the unknown. The science course as dictated by the colleges, on the other hand, is too unrelated to his experiences to accompany him outside the schoolroom.

Such a course need not be limited to one year. In the William Penn High School of Philadelphia, for example, it extends over the first two years. At the completion of two years of general science pupils may elect, if they wish,

an advanced course in any one of the sciences. Pupils in the Commercial Department are practically excluded from such election by the exigencies of their commercial requirements. Art and home economic students are required to enter the advanced chemistry classes, and normal school or general pupils usually choose the advanced biology. The only group in the school to which the two-year requirement in general science does not apply is the College Preparatory group. For these pupils a fourth-year course in physics, such as is prescibed by the College Entrance Examination Board, is substituted for the second half of general science. But all College Preparatory students who by any chance are registered for colleges which do not require science for entrance are scheduled for second-year general science instead of for fourth-year physics. I am teaching a class in college preparatory physics and one in general science, and nothing assures me of the wisdom of the general science as much as the difference in enthusiasm, mental outlook and moral force that distinguish the two groups. In college preparatory science, definitions, algebra, geometry, exacting measurements mask the real significance of the physical laws, and pupils are so concerned with book problems and tasks that they can not consider the scientific problems of home and environment. I would humanize the work if I could, but I must first meet college requirements, and when this is accomplished, time and opportunity have past and interest has been killed. The general science girls besiege teachers with questions in all sorts of unpedagogical places, the corner drug store, the street, the school-steps and pavements. I recall with amusement and pleasure an incident which occurred in one of my laboratories several years ago. In the midst of a lesson a former pupil, bespattered with the contents of a kitchen bowl, walked quietly into the classroom. Quite audibly she stated that she had fifteen minutes' grace from her domestic classroom to remove the stains scientifically, and she hoped I would excuse her while she did it in the

far corner. Her science work had been in that room, she knew where the chemicals were kept, and she made no commotion whatever and removed the stains within the time granted. The college science pupils rarely trouble us or please us outside the lesson hour. To them, the classroom is a pillory for the extortion of rules and definitions, and of ideas non-existent; to the general science girls it is a clearing house for the interpretation of ideas and interests collected from varying experiences and different communities.

I did not intend to urge a general science course, but to recount our success with it. Such a course has suited the needs of the William Penn High School—I believe it would suit the needs of all schools—and I hope ultimately to see it generally introduced. I desire primarily to urge that whatever courses are given should be humanized and vitalized and that attention be focused upon the pupil and his environment rather than upon the subject, whether it be botany, zoology, physics, chemistry or geography. Take out of the course whatever is dead wood to the pupil, substitute the simple facts of common life, make humanism rather than formalism the pervading and prevailing atmosphere.

Many who might feel inclined to so modify these sciences see, or think they see, two obstacles:

1. The inability to meet college requirements, or the necessity for carrying two grades of work with limited equipment and insufficient teaching force. (I must admit that more teachers are required for the new science that for the old.)

2. A weakening of mental discipline.

The many versus the few, or all of the children of all the people.

No problem of the day is giving the educator graver concern, and the critic sharper weapons than the frightful student mortality in our high schools. The entering class which taxes the capacity of the school auditorium dwindles

until upon graduation it finds ample space on the auditorium platform. Most of us have sensed the fact that the greatest loss occurs during the first year and the smallest loss during the last year, and that the tendency to leave is inversely proportional to the length of time already spent in the school. Most of us have likewise realized that for the vast majority of pupils formal education ends with the high school, and that for only an insignificantly small number of pupils does formal education continue into the college. Fewer of us have considered or had opportunity to consider the economic status of the homes in which the vast proportion of the entering pupils are born and reared, and the inadequate ideas of self support entertained by those who leave before graduation. An investigation covering this and other ground was recently made by Van Denburg and the result published in book form under the title *Elimination of students in public secondary schools of New York.*

The data collected by Van Denburg from many and widely separated high schools in New York show that of the vast army of pupils entering the high school, less than two per cent ever reach the freshman class in college. To disregard the ninety-eight per cent in order to satisfy the two per cent is an economic waste, a social crime and a high-handed procedure utterly at variance with all ideas of democracy. The head of a science department in a large city school was heard to say with pride and earnestness that while he was director of the work, courses would be planned with reference to geniuses, and that the turning out of one genius justified any course of instruction and any sacrifice of the less brilliant. All of us bow to marked ability—to genius; it is sufficiently rare for us not to have lost our awe and reverence for it, but as educators we know that the problem of the public schools is first the elevation of universal intelligence, and secondly, the development of specific intelligence, the elevation of all of the children of all of the people, rather than a few of the

children of a few of the people. At first sight, objection might be made to New York as an educational representative of the country at large, but Baltimore, Philadelphia, Chicago and other cities make a record scarcely higher, and only a few years ago a college president stated authoritatively that the number of pupils entering the colleges of the land was only four per cent of those entering the country's high schools. This universal statement accords fairly well with the specific record made by New York City. Our science courses so elaborately planned to accord with college demands, are obviously planned for the benefits of the extremely few. In the average high school we have "an aristocratic institution of a very pronounced type under the guise of one supposed to be popular and democratic." Of the, say, five per cent who go to college perhaps one-half will take the advanced courses in science. To fit this small fraction for college, laborious and interest-killing courses are now forced upon practically all high school pupils who have any science at all. In order to remedy this unwarranted condition let us plan for the multitude of children who want education now, not hereafter, a rational, comprehensive course which will supply their needs. And for those pupils who look forward to college, let us continue to carry on the irrational work demanded by the college, work "which serves chiefly to weed out the faint-hearted along with the too self-willed."

As paradoxical as it may sound, science courses should be arranged for those who leave the school early as well as for those who do not leave it until graduation. In one year, in New York, ten thousand pupils left the high school, and of this large army, two-thirds had not completed the first term, and one-fifth had not completed the second term. The records of nineteen schools show that thirty-three per cent of the entering pupils drop out the first half term, and twenty-one per cent the second half term. In other words, that one-half of all the pupils who enter high school never get into the second year. The figures which are true

of New York may be extreme for other and favorite localities, but at the best they are not as extreme as we should like to think. Whatever the school, it is true that education for a large proportion ends with the first year, and we should not shut our hearts and minds to the fact that those who leave have thruout life just as much or just as little directed science as we give them. A detailed formal course in science is about as good a substitute for real science in such cases as stones would be for bread. A course in general environmental science would serve their needs, and should be provided. Moreover, a course in science that every day contributes some new and helpful interpretation of the mysteries of the child's environment, will appeal so strongly to his interest that it will help to keep him in school.

RELATION OF MODIFIED SCIENCE COURSES TO MENTAL DEVELOPMENT

Early education applied to the school world the laws of the fairy world. Just as fairies by mere desire brought about miracles at places and times remote from themselves, so it was believed, if not said, that theoretical mental activity acquired in the classroom could overleap time and place and be transformed into any and every form of activity known and desired by manhood. Modern education applies to the school world the laws of science, which affirm that there is no such thing as action at a distance, and that energy of one type can be transformed into energy of another type only by means of an intervening medium. Just as physical energy needs a medium for its transference and for its transformation into other forms, so intellectual energy demands a medium for its transmission and for its transformation into specific practical forms. The physicist has postulated the ether as the main medium of the transmission of physical energy; the educator has fastened upon habit as the means by which intellectuality or mental energy can be transmitted and transformed. Our task as educators is two-fold: the increase of theoretical knowledge

or potential power in the child, and the development in him of habits, for the transmission of knowledge from schoolroom to life, and for its transformation from potential to kinetic energy, or from inactive theory to active practise. Education from this point of view consists largely in the formation of habits; the stronger, the more unconscious, the more frequent the habit formed, the keener, the quicker, the surer will be the translation of thought into action. Science courses based on general environmental phenomena have stronger habit-forming tendencies than those based on abstractions because they touch the pupil thruout his complete life rather than thru his classroom hours only, and because they force him to apply his intelligence continuously to familiar but widely diversified phenomena. The teaching of a day is more enduring than the teaching of an hour, and the pedagogic strength of modified science courses lies in their continuously operative teachings. The athlete who would win next year's game, exercises regularly. Knowledge of athletics and flexible joints are essential to success, and the skill of today guarantees future success only if it is kept in training by exercise. Similarly, mentality acquired in the schoolroom will not function in later life unless it be exercised in many and various ways. The old fairy-tale idea of action at a distance is not more absurd than the idea that the theoretical training and knowledge of the schoolroom can be translated into full-fledged efficiency in life's tasks. Mental power will be operative in an unknown future in the proportion in which it is continuously operative in the interval between adolescence and manhood. Science has taught the power of small forces regularly and persistently applied. Huge chains may be set in motion by the persistent pull of a small child; large fortunes are accumulated by narrow profits on enormous sales. Deeper scientific insight is acquired by the unceasing application of science to multitudinous phenomena of common life, rather than by the limited application of science to a few theoretical problems.

Mental development is stimulated by interest. The deeper and more permanent the interest aroused, the stronger and more lasting is the mental power acquired. Interest in environment is keener and more fundamental than interest in formal subjects, interpretation of life's spontaneous phenomena is of closer significance than is the solution of laboratory problems, and hence from the standpoint of interest alone, the human science courses outlast in value the formal science courses. As Professor Dewey says, "no training of the sense organs in school, introduced for the sake of training alone, can begin to compete with the alertness and fullness of sense-life that comes thru daily interest and intimacy in familiar occupations." There is a real motive behind, and a real outcome ahead, and the pupil throws off his proverbial passive and receptive attitude and becomes alert and active. Interest overrides difficulties insurmountable to uninterested application, and leaves in its wake no long list of discouragements.

Scarcely any students fail to pass the modified science, even tho it is as hard in its way as is the formal science which is proverbially strewn with wreckage. Students leave the course with a respect for themselves as well as with a feeling of awe for science, and with a sense of inspiration for continued investigation instead of with a feeling of discouragement toward future efforts.

Early education laid emphasis upon mental development; modern education emphasizes efficiency. Three factors are involved in efficiency: first, man must be an able producer; second, he must be an intelligent consumer; and third, he must be a sympathetic rational distributor. Stating the same truth differently, a man to be efficient must have self reliance, self respect and social responsibility. Does modified environmental science measure up to these tests? It seems to me that it does. It increases self reliance, because it forces the student in early high school days to interpret changing conditions of environment and

places upon him then the responsibility of intelligent adjustment to his surroundings. It increases his self respect because it arouses in him confidence in his own efforts, and eliminates discouragement and lack of confidence to do the hard thing. It opens up to him undreamed-of visions of social responsibility thru its lessons of nature's and man's actions and interactions and their dependence and interdependence.

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VII

TRUE VOCATIONAL PREPARATION[1]

The younger generation shows many signs of being too impatient to prepare for life. What is called vocational training is being steadily pushed down thru the secondary into the elementary schools, and presumably it will soon reach the cradle. The old notion that a child should be so trained as to have the fullest and most complete possession of its faculties and its competences in order to rise in efficiency, to gain larger rewards, and to render more complete service, has given way to the new notion that it is quite enough if a child is trained in some aptitude to enable it to stay where it first finds itself. Of course, under the guise of progress, this is retrogression. Carried to its logical result, it would mean a static and a stratified social order. It would put an end to individual initiative and to individual opportunity. It is not difficult to foretell what results would follow both to civilization and to social order and comfort. The basis for any true vocational preparation is training to know a few things well and thoroly, and in gaining such knowledge to form those habits of mind and of will that fit the individual to meet new duties and unforeseen emergencies. This is the real reason why the traditional training given at the University of Oxford has produced such stupendous results for generations. Of course, the Oxford training has had, to some extent at least, selected material to work upon; but it has done its work amazingly well. Whether in statesmanship or at the bar or in the army or in diplomacy or in large administrative undertakings in business, the man trained at Oxford has won first place by reason of the character and quality of his performance. No such results have been obtained, and no such results need be expected, from a school and college training which is a quick smattering of many things. At

[1] From the annual report of the President of Columbia University, 1913.

the bottom of the educational process lies discipline, and the purpose of discipline is to develop the power of self-discipline. When discipline is withdrawn, dawdling quickly enters, and the habit of dawdling is as corrupting to the intellect as it is to the morals. The patience to be thoro, the concentration to understand, and the persistence to grasp and to apply, are the three traits that most clearly mark off the truly educated and disciplined man from his uneducated and undisciplined fellow, and they are precisely the three traits which are most overlookt and neglected in the modern school and college curriculum. A school is supposed to be modern and progressive if it offers something new, regardless of the fact that this something new may be not only useless, but harmful, as an educational instrument.

With the growth of democracy the need for self-discipline becomes not less, but far greater. When great bodies of men were controlled by power from without, then they were in so far disciplined; now that in all parts of the world men are shaping their own collective action without let or hindrance, the need for self-discipline is many times greater than it ever was before. In an older civilization self-discipline was necessary for the protection of individual character; today it is necessary for the protection of society and all its huge interests.

Too much slovenly reading, particularly of newspapers and of magazines, but also of worthless books, stands in the way of education and enlightenment. In no field of human interest is the substitution of quantity for quality more fraught with damage and disorder than in that of reading. The builders of the Constitution of the United States and the great lawyers of the colonial and early national period knew but few books, but the books that they knew were first-rate books and they knew them well. Nothing contributed so much to the fulness of their minds, to the keenness of their intellects, or to the lasting character of the institutions that they built, as their reflective

grasp on a few great books and on the principles and literary standards which those books taught and exemplified. Such a task as that which Gibbon set himself over a century ago would be impossible today, even for a syndicate of Gibbons. There are too many books now to enable another History of the Decline and Fall of the Roman Empire to be composed. Productivity of the highest type is checked by the excess of facilities. This is true both of books and of physical apparatus. We could get along well with far fewer books and far less apparatus, and we should be likely to get more ideas and a higher type of human being. The universities of the world search restlessly for truth, but too often they overlook the indubitable which lies at their feet.

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VIII

DISCUSSIONS

MR. BALFOUR AS THEOLOGIAN[1]

The Gifford Lectures were founded by Adam Gifford, a Lord of the Court of Session, who was born in Edinburgh in 1820, and died at Granton in 1887. By his will he left 25,000 £. to the University of Edinburgh, 20,000 £. each to Glasgow and Aberdeen, and 15,000 £. to St. Andrews, to endow lectureships in Natural Theology, subject to no dogmatic test whatever. The first lecturer appointed was Max Müller, who was followed by Principal Caird, E. B. Taylor, Andrew Lang, J. Hutchison Stirling (author of *The secret of Hegel*), William James, and others. The Gifford Lectureships are the most liberally beneficed of all academic appointments, and are the only University posts the emoluments of which, during the time that they accrue, compare not unfavorably with those of a popular comedian.

Mr. Balfour, who finished his first course of lectures at Glasgow University on Friday week last, took for his subject *A belief in theism*, and essayed his task without the help of notes other than could be contained on the back of a foolscap envelope, and perhaps on that account his remarks were occasionally somewhat disjointed and his sentences strangely convoluted. He began by saying that he was about to deal with one of the greatest subjects which could interest the human mind, and he maintained that the preservation of values—ethical, esthetic, and cognitive—depended on our contemplating them in a theistic setting. His material was not design as seen in the external world, nor his argument the old and valuable argument from design. He had chosen different methods and set himself a larger object. The general principle on which his broad line of argument was based was the contrast between the causes of belief and the reasons for belief.

[1] From the Athenaeum (London).

All our beliefs might be considered as natural products, whatever more they might be.

A second general principle that he enunciated was that, in the consideration of beliefs as natural products, their value would be profoundly affected by their origin. He laid it down as a proposition that unless we could find in the causal series which had produced beliefs, some adequate source for them, then these beliefs would inevitably suffer in value. If beliefs were to be regarded from the side of natural production, we must find in their pedigree some source higher than our own poor reason. Once that was granted, the central nucleus of his argument was conceded. Yet he was forced to deal with subsidiary issues, because there were two kinds of mitigating circumstances which might be urged as reasons for qualifying his full conclusion. The first of these arose out of the fact that beliefs which might be taken as axiomatic seemed to have such absolute necessity that inquiry into their origin was unnecessary. To grant that, however, left the paradox unanswered. How came they to have such certitude by intellectual right? The Kantian theory of knowledge had made out that such fundamental or axiomatic truths were constitutive of the world, that, in fact, the world was what it was because of them. While he did not intend to discuss any form of idealism, he would raise this one point. The critical idealists had attempted to construct all knowledge out of absolute, certain, and universal categories, supplemented by immediate and intuitive observation. As against this he ventured to show that if we were to construct or justify the scheme of commonsense and scientific knowledge, we required unproved and unprovable assumptions. There were inevitable beliefs, beliefs not inevitable, and yet again and beyond these tendencies to believe, probabilities—in his sense of the term—which we might see influencing the history of science. The second mitigating circumstance he insisted on still more often. It was that natural selection—or any other kind of selection—was incapable of accounting directly for any of the higher values.

Why, in the face of so much criticism of the Darwinian theory, had he referred to selection and to it alone? Because selection was the only substitute he knew for design. It imitated design up to a point. Therefore, if to selection could be traced back the body of our beliefs, we might mitigate the argument by showing that they were due not merely to a collocation of atoms or blind forces, but that something had been interpolated imitating intelligence. If we could show that the higher principles on which we acted had survival effect, would this maintain their values? He doubted it. But it would be better than to regard them as the chance result of the unthinking clash of natural energies. But the argument lost force in any case, since no one could show that the higher values had survival effect. To maintain anything of that kind would drive us to the conclusion that the further we got from the unmitigated action of selection, the more we were cut adrift from that which, on this theory, was the basis of all our values, of all our knowledge, ethical emotions, and esthetic feelings. It was a wholly impossible theory. He attempted to show in detail that natural selection could not be made responsible for the higher values, and that the higher the value the more it seemed removed from the primitive consequences of natural selection. This, in many forms and concerning many subjects, was his main line of contention. It was neither the argument from design, nor an argument of the metaphysical *a priori* type which had played a great part in the history of thought, especially among the great thinkers of the Continent. It was an argument attached to no great metaphysical system, and avowedly based on commonsense and the scientific developments of commonsense, which were our working creeds. It was not based on any intuitive sense of religious values. He did not despise or underrate the direct argument from religious values. A man might be, and was, quite right in saying that religious values could rest on religion, and on it alone. But that was not an argument in favor of religious values, but a state-

ment that he felt the value of religion. For those who weighed one side and the other of a discussion it was possible only to rest the value of religion on other values in which they put trust. It was religious values he had to prove; he therefore rested them on other values which were acknowledged. Religion being the conclusion, he did not bring it into his premises.

To whom, therefore, was this argument addrest? Not to the metaphysicians as such. They could take little interest in what was not a system, but a point of view. Yet there were certain aspects of these problems which, he thought, ought to be taken into account by all those who desired in the interests of philosophy to construct a philosophy of science and of commonsense. While this might not be necessary either for science or commonsense, it was of vital importance for philosophy. His own opinion was that European thought was lamentably deficient in anything deserving to be called a philosophy of science, and that such attempts as had been made in this direction had been wholly unsuccessful.

But the Gifford Lectureship was not founded mainly for the philosophic, and he endeavored to speak mainly to others. Of these others whom had he attempted to help? To many it was wholly superfluous to argue in favor of a God. To them He was a daily and hourly certainty, as real and immediate as anything they could conceive. They were above his argument. Again, there were others who by temperament or training had no interest in such speculations. They were probably too busy; the pressure of immediate necessity left them neither time nor inclination for this kind of reflections. The ordinary beliefs of commonsense, science, and religion were sufficient for their needs. On this class depended the work of the world. He was not one of those who urged every man to make himself acquainted with the arguments on all important questions. God had not so made the world that its ordinary business was to be carried on by dialectic. These practical men

were beside his argument. He was addressing those whose very nature drove them to question and probe into their own destiny, and the destiny of the race, and to examine the beliefs on which conduct turned.

Even this class consisted of enormous numbers. Among them we found a kind of shallow, infinitely tiresome, and wholly uninstructed sceptics, who aimed at acquiring a reputation for enlightenment on the humble capital of a few materialistic tags, and a few of the obvious difficulties which had opprest mankind since the dawn of thought. In these he had neither interest nor hope. At the other extreme were the great doubters. From these had come pillars of orthodoxy, leaders of the greatest heresies, founders of great systems of thought. In any given generation they could be but relatively few in number.

Between these two extremes were a very large number of educated persons greatly perplexed by problems that modern science, philosophy, or criticism had forced on all desirous of taking a spiritual view of the universe. Such men might agree that a world without God was one in which values were greatly diminished; but might argue that their intellectual integrity might compel them to relinquish these values, and that, if unfettered reason acting on the problems of the world so compelled them, they must obey with stoical resignation. To such, he thought, his line of argument might at least suggest consolations. Theirs was an honorable attitude of mind, but, he was convinced, profoundly mistaken. It was based on an entirely false contrast between intellectual values and other values. Such men were misled also by the pernicious fallacy that all speculative difficulties began when they left the solid ground of sense and experience, and reached the supersensible and metaphysical. There were speculative difficulties in and around us, in our relation to things, the relation of thought to matter, and soul to soul.

A further mistake was the idea that the values of religion and morality were to be saved, but that the things of the

intellect stood by themselves. He tried to show that the theistic setting was a necessary part of all values, including intellectual values as well as ethical and esthetic values. That was the real moral of his lectures. A belief in theism was not an accidental or unessential ornament—a theistic belief is essential; and Mr. Balfour declared that in whatever directon we look, on whatever values we cast our eyes, if we want to retain these values, be it in the domain of beauty, or of morality, or of science, there is but one setting in which they will retain their values undiminished—and that setting is a belief in God.

THE WOMAN PERIL IN AMERICAN EDUCATION

The article by Admiral F. E. Chadwick, in February's EDUCATIONAL REVIEW, entitled *The woman peril in American education*, deserves wide attention and careful reading, as it undoubtedly expresses what many persons outside of educational circles, as well as within, will call the "masculine point of view." Its true and false statements should be separated, and its viewpoint squarely met. Is it a mere bogie, like the "Yellow Peril," and does Admiral Chadwick belong to the Yellow Journal type of persons, who sees danger in every change from the good old days, or is it even partially true? In the first place, one recognizes that Admiral Chadwick exaggerates his statements. His first sentence, for example, says, "For generations the American boy, taking him full and by" (whatever this may mean) "has been under woman tutelage, as the numbers attending universities, colleges and special schools controlled entirely by men are comparatively negligible quantities." Everyone familiar with the history of education knows that men predominated as teachers before the civil war, and therefore if the American boy has been under woman tutelage for generations, it has been the tutelage of his mother, and it can hardly be assumed that Admiral Chadwick plans to go back to Spartan days and remove the boys from their homes.

Admiral Chadwick claims that the effect of these "generations of woman tutelage" has had "so evil an effect upon the manhood of the country, on the qualities that go for making the masculine character that it is more than full time to consider most seriously this great and vital question." Are the American men today so despicable in the eyes of China, India and Turkey—where manhood is trained wholly by man? Who will agree with Admiral Chadwick that manhood has positively declined? And if it has, why lay the whole blame on the women? Is it the same old story—"The woman whom thou gavest me—?"

After saying that schools should train in honesty, uprightness in conduct, courtesy, manliness, etc., Admiral Chadwick comes out with the astonishing statement: "Now to whom in our country is turned over this duty in the case of boys, who, despite all the claims of the feminist movement, must later do the main work of the world; build and handle steamships and railways, command armies and fleets, fight our battles, tunnel our mountains and make our steel? That the training of these prospective men, in whom force of character is a first essential, should be entrusted to women, is of all things the most unreasonable and illogical. To do so is to lose sight of that greatest of all influences, the subconscious, the psychical. We have for generations thus been subjecting our young males to the psychics of the women, until we have a result in a feminized manhood, emotional, illogical, non-combative against public evils. We have in this result the cause, in greatest degree of our supineness in municipal affairs, in our inability to struggle against the capture of franchises, in the sitting down of our people and wanting everything done for them, in the general want of stand-upness. It is not that women are not, in their way, active in public matters, but the men, in the man's real way, are not."

One would think the railroad building, and steamship sailing was declining! The American nation has developed more in the last fifty years than in the preceding one hun-

dred? Does this show the evil of women teachers? It is quite as logical to say the development has come because the women have been the teachers, as to say lack of development in certain men is due to their teaching. If Admiral Chadwick would gather statistics from men active in public affairs, he *might* find out that they had had women teachers, and that the men who cared nothing for public affairs had had men teachers. Some of the most inane college men are those who come to college from academies taught by men, in which fraternities are emphasized as the highest type of social activities. Why not blame the women teachers because men do not crowd the churches as they did in colonial days?

But aside from Admiral Chadwick's indictment of man in the above, let me call attention to his statement that "the real work of the world" (which he claims men must do), is the material prosperity represented by railways, steamships, tunnels, etc. Undoubtedly, if you pushed Admiral Chadwick to the wall, he would admit that all these exist only for the people who are to use and enjoy them, and that these people chiefly live in homes, and that in these homes, usually a woman is at the head; I mean "head" in the real sense of making the home a home. Her desires, her taste, her management of the home affairs, makes the home. This is the subconscious and psychical background of our civilization, and without it few people would care about the railroads. Admiral Chadwick might, also, if pushed to the wall, admit that it was to make some woman more comfortable, more happy, that the great material wealth of the world has been accumulated: that women have been the inspiration of great achievements. Man has not been wholly selfish in building governments and nations of civilized times. He has worked for his wife, and his child. The real work of the world, then, is the keeping pure and high and active the conception of "home as it has come down thru the ages, and that is the work of women, and not of men. Men can aid it, and do, but

they can not create it. Now the women who teach carry into the schoolroom this home-creative atmosphere to some extent—more than a man ever can. Is it not quite as important that the future man get right ideas of courtesy, good fellowship, control of self, and helpfulness as that his fighting qualities or his independence and aggressiveness be cultivated? The world of men and women must live together in mutual cooperation, each granting the other his proper sex values. If the growing boy gets his view of life from men only, and his ideals from men only, they are bound to be half-truths, and he is bound to be but half efficient in his living ability. The same is true of the girl's training. She also needs in every-day work both masculine and feminine models. Only so can she adjust herself, or the boy himself to the world as it exists today, for women are going in increasing numbers into other occupations than teaching.

Admiral Chadwick further says, "I lay down the broad statement that no woman, whatever her ability, is able to bring up properly a man child." The Romans were evidently all wrong when they honored the mother of the Gracchi, the learned daughter of Scipio who herself taught her sons—and also the great men of our own times, who in their hour of triumph, have given their mothers the credit for their achievements. When is a man "properly brought up?" What is to be the criterion, when he satisfies men, or women? Admiral Chadwick further says, "The woman's ability to teach, let me say at once, is not part of the question. I am concerned only with her unconscious destructive influence on the masculine character of the boy." If Admiral Chadwick is right, then the old Spartan plan of camps is the only way to remove the boy from the destructive influence of—his mother!

But if the man of today is not so manly as Admiral Chadwick desires, how does he account for the fact that the girl of today has the independence and sterling qualities, or is acquiring them at an astonishing rate, even without men

teachers? Dr. H. J. Mozans, in his *Woman in science* says: "Mothers no longer attempt the old control over their daughters; they would find it impossible. The girls go off by themselves on their bicycles; they go about as they please; they neither compromise themselves nor get talked about; for the first time in man's history it is regarded as a right and proper thing to trust a girl as a boy insists upon being trusted. Out of this personal freedom will come, I dare say, a change in the old feeling of young man to maiden. He will not see in her a frail, tender plant which must be protected from cold winds; she can protect herself perfectly well. He will not see in her any longer a creature of sweet emotions and pure aspirations, coupled with a complete ignorance of the world, because she already knows all that she wants to know. Perhaps the greatest change is that woman now does thoroly what before she only did as an amateur."

It is because of this new woman that Dr. Mozans observes—a transient type, no doubt, but surely proving that the old type is gone—that Admiral Chadwick's proposed solution, of separate schools for girls and boys thruout the United States with women teaching the girls and men the boys (the men, by the way, to get an average salary of $700 and the women $500) is unthinkable. You might just as well try to put the franchise on the basis of church membership! The men who would consent to teach school, and stay with it, on $700 would not be any more able to instill manliness—no, nor half so likely, as the women who teach for $500. It has become a maxim in our country that the "man who can, does, the man who can't, teaches." No, Admiral Chadwick is wrong in his conception of what is wrong in education. But that education needs evolution, all thoughtful educators agree. But when Admiral Chadwick says "To pursue our present system is to continue to strike at the very root of the quality of the manhood of the nation, its masculinity"—he confuses causes and effects. To blame women teachers for some qualities he

fails to find in the men of today is about as logical as to assume that Washington, Franklin and Lincoln owe their greatness to the fact that they had little or no schooling, even with the masculine teachers of their day! One feels inclined to question the main assertion and ask, Has manhood declined in America? If so, in what elements of masculinity? Those that belong to pioneer days, and were produced by pioneer conditions—not by men teachers? The school in early days interfered little with a man's development; today, whether taught by men or women, it holds the child and youth for a longer period, and controls him more absolutely. Unquestionably, we have confined the school curriculum too closely to a book-course—but thruout the United States, courses of study are made chiefly by men. The notable exception is in the Chicago system, where a woman has introduced most radical changes for both boys and girls, and changes which are being hailed the most satisfactory progressive educational work of the country, and these are due to Mrs. Ella Flagg Young. Will Admiral Chadwick agree that the "out-of-door" school the year round will help to develop manliness?

Our school courses need revising, and the long hours need to be spent in vigorous, active occupations as well as books and desk work. Along this line, should the evolution proceed, not by excluding the efficient and cheap workers who have been discovered.

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A STUDY OF THE WORK DONE BY KINDERGARTEN CHILDREN IN THE FIRST GRADE

It was with much interest that I read Superintendent E. S. Holland's paper on *The effect of kindergarten work on the progress of children in the grades*, which appeared in the October number of the *Kindergarten Review*. For I have felt keenly, for some time, that what we need is

"a very careful analysis of the work of the kindergarten." We need very much to know "what effect the kindergarten training has had on the nervous condition of the child and upon his ability to concentrate and apply himself to a set task." We have, for too long a time, been content with enumerating the capacities which he should take with him to the primary school and have not produced any evidence that he did take them.

It is certainly incumbent upon us to know "if his general physical condition is impaired, unaffected, or improved by a year of kindergarten life." We must obtain facts and make tables and be able to present statistics. For only in this way can we impress the public in general and boards of education and superintendents in particular with the value of our work.

Superintendent Holland has started out to investigate "the effect of kindergarten training upon the future progress of the children in the grades." He bases his conclusions upon findings in the eighth grade of the Louisville schools. It is certainly flattering to us who are in the kindergarten work to have it assumed that our work is of such a high grade that one year of it will offset the effect of eight years of other training. But flattering as this may seem, I believe that none of us are willing to assume such a responsibility. There is not another grade in the whole system, from kindergarten to university, which would do so. Of course it is customary to blame the previous training of the child for any defects which may appear. The kindergarten blames the home, the elementary school the kindergarten, the high school sighs over the lack of training in the modern elementary school and the college professor wishes that students might not have touched his subject before coming under the said professor's influence. But no school is willing to assume responsibility for more than one year after the student has left that school. I feel sure that the elementary school feels no responsibility for the age at which students graduate from high school. And I know, from

personal experience, that the high schools hold themselves responsible simply for the work done in the first half-year of the freshman class at college. The college itself looks to the high school for results during that period only. After that it assumes the responsibility. So why lay all this responsibility upon the kindergarten?

To be perfectly fair to Superintendent Holland he has made a table based on findings concerning children in the first grade. In this table the children are rated as slow, average, strong. The results are not very favorable to the kindergarten. Mr. Holland suggests the possibility that the fault may lie with the primary school. It is for this reason that I find this table worthless. For the fault may lie with the kindergarten or it may lie with the primary school. So until we have some more definite information as to the character of both the kindergartens and the primary schools, this table is not only worthless, it is misleading.

How much of our educational talk is simply glittering generalities! We talk of the kindergarten, we talk of the primary school as if they were whole things in themselves. To me this is an impossible attitude of mind to take, for there is as much divergence between kindergartens, there is as wide a difference in primary schools as there are extreme differences in personalities. These types of schools depend so much upon the personality of the teacher, the little children are so defenceless in the face of a teacher's personality, that it is absolutely impossible to base any statistics on such generalizations as kindergartens or primary schools. Before I can accept any tables based on such generalizaons, I must know what kind of kindergarten teachers trained these children for one year and what ideals the primary teacher had who received these children from the kindergarten.

A few years ago there was much loose criticism in Washington concerning the kindergartens. So much of it came to Miss Nannie Jackson, the assistant supervisor of

kindergartens, that she determined to make an investigation of just what the kindergarten children under her supervision had done in the first grade. But she did not base her conclusions upon the work of the eighth grade. She felt that she could assume legitimate responsibility only for the work done in the first half-year of the primary grade. After that time she felt that the primary grades must share the responsibility with the kindergarten.

She submitted the following questionaire to all the kindergarten teachers under her supervision:

1. Number of children promoted to 1A in September;
2. Name of teacher to whom promoted;
3. Names as occur on the classification sheet;
4. Number withdrawn;
5. Number of children promoted to 1A in September promoted to 1B in February.

The teachers were required to account for every kindergarten child. In this way the report was very complete.

As will be seen from the questionnaire no attempt was made to compare children who had had kindergarten training with those who had not had such training. The aim of the investigation was to find out just what the kindergarten children did in the grades. The results and conclusions were gone over with the supervisor of primary grades, who agreed that both were, in her estimation, just. The results were tabulated according to schools, which I shall number, not name.

NUMBER OF KINDERGARTEN CHILDREN PROMOTED FROM IA TO IB IN FEBRUARY OR A HALF-YEAR AFTER LEAVING THE KINDERGARTEN

School I	60%	School XI	81%
School II	73%	School XII	85%
School III	65%	School XIII	82%
School IV	46%	School XIV	83 1/3%
School V	80%	School XV	100%
School VI	50%	School XVI	82%
School VII	78%	School XVII	88%
School VIII	76%	School XVIII	60%
School IX	84%	School XIX	66 2/3%
School X	86%	School XX	57%

At first glance this table does not seem very flattering to the kindergarten. There is only one instance of all the children being promoted while there are several instances of low percentages, even as low as fifty per cent. What is the explanation of this wide diversity in results? Simply the wide divergence in the personality and the training of the teachers concerned, both kindergarten and primary. For example, school VI had a ranking of fifty per cent; half the children in that grade failed of promotion. Just exactly the result one would expect when the fact is known that the children went from a poor kindergarten teacher to a poor primary teacher. In school IV the percentage is even lower, 47 per cent. This was due to a mediocre kindergarten teacher and an absolutely inexperienced primary teacher. School VIII has a splendid teacher in the kindergarten and one would expect that a very high percentage of her pupils would pass. Instead, only 76 per cent past, which low rate is due to the fact that they were promoted to the care of a very poor primary teacher.

In school XVIII the percentage is low, 60 per cent, which is due to an average kindergarten and a poor primary teacher.

Schools XIX and XX are suburban schools in which the attendance is very irregular. Many of the children attend only during a few weeks in the fall and two or three months in the spring.

The pupils of school XV were fortunate, they all past at the end of the term, giving the school a rating of 100 per cent. But this is just what one might expect when children have been under the care of a good kindergarten teacher and are then promoted to the tutelage of a model primary teacher. It is simply an example of what might be done if we had teachers better equipped for their work and if the gulf between the kindergarten and the primary school, both in spirit and purpose, were not so wide.

It is not my purpose to shirk any responsibility which should legitimately fall upon the kindergarten, or on the other hand to lay undue responsibility on the primary

school. I am only too well aware not only of our own shortcomings but of the many points of excellence in the primary school. I am perfectly willing to assume all responsibility which should be placed on us but I am not willing that the kindergarten should be asked to assume responsibility for the entire eight grades of the elementary school. The investigation of Miss Jackson shows quite clearly the havoc which one poor or even inexperienced primary teacher can work among well-trained kindergarten children in the brief space of one term. If we multiply this by sixteen poor teachers or even eight alternating with eight good teachers, what can we expect? Such an assumption of the wonder-working powers of the kindergarten may be very flattering but it can hardly be called just. And I feel that we should remonstrate against it.

What we need is an attitude of mind in superintendents, principals, primary teachers and kindergarten teachers which will include the kindergarten as the first step in the primary school. We may have to give up a name but what does that matter when by so doing we may gain mutual understanding and good-will! Then we all need a change of heart and more sympathetic appreciation of the work done all along the line. In this way we shall all gain more insight into each other's work and shall be able to connect our work more closely and so make it more effective.

Also we need better-trained kindergarten teachers, trained not only in their special field but also in primary work. We need primary teachers trained in kindergarten work. We need superintendents who are thoroly conversant with kindergarten methods and the same supervisors for kindergartens and primary schools. But since these ends will take time to accomplish let us continue to make investigations of the results of our work, for such investigations will be of as much value to us as to the public.

MARTHA MACLEAR

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IX

REVIEWS

Kolleg und Honorar. Ein Beitrag zur Verfassungsgeschichte der deutschen Universitäten. VON DR. E. HORN. Academischer Verlag: München. 1897. p. IX + 158.

The thesis of the present book, which is not a new one, is to show the gradual growth, in the light of the historical development of the German universities, of the system of "private" lectures, so-called, in which the fees from students go, wholly or in part, to the professor, to point out the undesirability of the further retention of the system in the modern university, and to show the desirability of a complete return to the original system of "public" lectures delivered by professors whose stipend is fully paid by the state.

The present system of remuneration in the German universities, it will be remembered, is essentially as follows: As a rule, a professor (*ordentlich* or *ausserordentlich*) is required to announce at least one "public" (*gratis*) lecture course of one hour a week, or a free series of exercises as a special course (*privatissime*), and one "private" (*privatin*) or fee lecture course. Other fee courses he can announce at will. His income is a total usually composed of (1) a stipend, (2) a personal supplement, (3) a residence or residence idemnity, (4) all or part of the fees paid by students for his courses, and (5) a part of the general fees paid by students to the university (examination fees, diploma fees, etc.). The receipts from course fees are a most important proportion of the total income of the professor, and often far exceed all the other sources of income combined.

It is this state of affairs that is the subject matter of the discussion in the present book, where the author's contention is that historically and logically the present condition is wholly a false one.

The early German universities in their origin were public foundations maintained by public means; their teachers were public teachers and instruction was essentially free. The universities of the 14th century, to be sure, have the common character of all European universities and there are fees (*collectae*) paid under the several faculties. In the 15th century, however, this was changed and the entire instruction was free, except in the *facultas artium*, the forerunner of the modern philosophical faculty, where fees were still exacted. From the 16th century on, this practise, too, was discontinued and all lectures and disputations (*lectiones* and *exercitationes publicae*) in the universities were free to students; documents and statutes concern themselves only with these and the details of instruction as to courses and hours are with regard to them alone. "Private" courses down to the 17th century in the laws and regulations of the universities are only incidentally mentioned, and here alone where the unofficial instruction given by doctors and masters is concerned. The "public" lectures were the only ones that were necessary for the completion of the academic curriculum and officially there were no others. Side by side, nevertheless, with these there was from the beginning private instruction which fundamentally consisted of practical exercises and repetitions, a character that they still maintained down to the middle of the 17th century. These, however, were offered voluntarily by the professors, and payment for them was a matter of agreement between the teacher and the student. Only in the second half of the 17th century, and then to an increasing amount in the 18th, do the "private" courses enter into competition with the "public" courses, and the university authorities not only recognize them, but prescribe them and concern themselves with the systematic payment of fees. At the present time, the author states with asperity, the "private" courses are the principal courses, and he asks why the "public" courses have been retained at all.

The present use of "public" and "private" as applied to university courses of instruction, according to the author, is false and misleading. It at once gives the impression that the university is to a certain extent, which, however, nobody is in a position to determine, a private matter of the professors. This, however, has never been the state of the case. University professors from the 16th down to the 18th century did, it is true, give private instruction, but the university itself had nothing officially to do with the matter and university auditoriums were nowhere used for such purposes until down into the 18th century. The evils inherent in the present system are apparent. It results directly in a wholly unfortunate differentiation of income to the professors in that the returns from fees are greater in the more popular subjects of instruction and infinitely less in the more abstruse, which from the nature of the case are less sought by the student; and it may readily act, in the same way, to influence the intending teacher in the choice of subject which he is to make his special field of study and research away from the unusual, where the predilection may lie, to the more remunerative, which otherwise might very well not have been his choice. In any other country than Germany, and it is supposable under circumstances even there, a system of fees to professors would surely tend to popularize the subjects of instruction, to the effect of a wider appeal to the student body and the possible deterioration of scholarship.

The reasons for the growth of the "private" and the decline of the "public" lectures, which as the author points out, as has been stated, originally and legitimately alone had possession of the field, is to help out the stipends paid by the state, which from inability or unwillingness on its part has failed to provide a proper remuneration. Historically the professor has been obliged in an increasing amount, in order to assure himself of an income sufficient for his purposes, to supplement the stipend, which in reality should cover the whole, by private labor which directly

yields pecuniary results. The state at the present time, whatever may have been the exigencies of the past, is abundantly able, says the author, to take the matter into its own hands, to throw completely overboard the system of "private" lectures, and to go back, once and for all, to the original system of "public" lectures, delivered by professors whose stipends are adequately paid by the state to students who are not required in their turn to pay a fee to hear them.

The book is a thoro presentation of its subject in the light of its history in the older universities of Germany and its conclusions are convincing. It is plainly a lesson, both to the state supported and to the endowed universities of America, which fundamentally are in no different case, in what is to be resolutely avoided under any possible conditions of their future development.

WM. H. CARPENTER

COLUMBIA UNIVERSITY

Unterricht und Demokratie in Amerika. Von BENJAMIN IDE WHEELER. Strassburg: K. J. Trübner. 1910. 295 p.

The subject matter of this book can interest an American, says the author in the preface, only in so far as he appreciates the circumstances and conditions of our native land which a fellow countryman considers worth treating in detail for German readers. The volume contains the lectures which the writer delivered during his very successful career as Roosevelt Professor in the winter semester of 1909–1910 at the University of Berlin. He has endeavored, thru their publication, to contribute to the removal of the false impression held abroad of the fundamental conditions and ideals of the people of the United States, far-reaching in their effect, and to promote a mutual understanding and respect between two kindred races.

The subject is American education "as it has grown on the one hand from the spirit of a democratic constitution, and on the other hand as it represents the basis of a popular rule fixt and determined by public opinion." There are twenty-two lectures, most of which are devoted to this

special point. The opening and closing lectures handle kindred problems such as public opinion, language and race, the church, the press, politics and others. The whole book is a study thruout of the foundation and origin of public opinion in America.

In education, the church, the press and politics the author discovers the sources of public opinion, but that these four factors are the only ones that contribute to the training of this characteristic he declines to assert positively. That they have a very strong influence on the character and thought of the people is not to be denied, and that among them education is the strongest force is without doubt true. For this reason, therefore, he rightly gives educational training a large part of his consideration.

The lectures devoted to education deal chiefly with the organization of the American system. We are made familiar with the main phases in the history of the development of the college and with the meaning of it as a modern institution. Dr. Wheeler frankly criticizes—for example, on page 114—the deficiencies of the colleges. He lays chief stress upon the spirit of fellowship and unity which the college community with its own peculiar atmosphere impresses yearly upon thousands of young people for their future life. In his discussion of women's colleges, the higher education of women and coeducational colleges, the author maintains (page 140) that there is a weakening and abandonment of the movement toward coeducation. His remarks concerning the universities, their relations to the colleges and their other characteristics, concerning the students, their attitude toward public authority, their fraternities and other special features of academic life, must have interested his German student body particularly.

Going farther down the scale of the educational system, in a discussion of the high schools and their purpose and attainments (page 214) he regards the disproportionately large number of women teachers as unfortunate. The reason being, and this is the weak point on which he places

his finger, that the pay of the teaching profession in America is so small that ambitious young persons are not attracted to it.

Farther on he turns to the public elementary schools. These are, in the remarkable uniformity of their organization and administration thruout the country, the great mill of equality thru which everyone must pass. Among the different kinds, it is the public school which in greatest measure is able to form "public opinion." A certain number of them give to millions of children for their later life a set of definite opinions. This very weighty fact I should have liked to see emphasized both because of the interest of the subject and in behalf of the foreign readers of the book.

The presentation in two chapters of the position of the church in America is clearly arranged and succinctly stated. It would have been more profitable to the foreign reader if closer attention had been paid to fundamental questions indispensable to the understanding of the American religious attitude, such as the question of original sin and its development, the influence of the thoroly optimistic temperament of the Americans, or the question of unitarianism.

In view of the notion which prevails abroad as to the controlling power of the American press, it is especially interesting to see how the author passes sentence in the chapter devoted to the press. The cardinal point with him is the question how far the actual influence of the press reaches in developing and fostering public opinion. By means of examples he attempts to prove definitely that the influence of the daily press is not all-powerful. Here we find a very accurate study of the relation between newspapers and newspaper readers, between the exertion of influence and the possibility of being influenced. Dr. Wheeler believes that he can prove an indifferent attitude on the part of the majority toward the leading articles of the papers.

Whether Roosevelt really is, as Wheeler avows, a kind of moral reformer, and whether the time of his administration

and activity means a lasting movement towards idealism, will be decided from a more distant perspective than is now possible. Even in this book itself we see the optimistic spirit which is the keynote of the Americans' view of life and which is enviable indeed provided it does not blind them to serious existing defects. It is the result of this optimism that the voice of the critic is heard but little and rarely in his book. Behind the charming humor and the light irony which occasionally shows itself, Dr. Wheeler's faith stands firm and unwavering. Americans are following the best course, he believes, and those things which are not today beneficial will soon improve.

We would willingly have heard more from him, especially in view of the very vigorous discussions which have been carried on for some time in Germany over the aims and the methods of education, courses of study and subject matter for teaching. We would gladly have heard more in regard to the treatment and significance of these questions and of the observations and experiences of a man who, like the author, is a leader in his own country in the field of education, and, on the other hand, has become thoroly acquainted with the German situation. It is to be hoped that we may soon have a supplement to the book before us.

E. DAENELL

KIEL

Astronomy: a popular handbook. By HAROLD JACOBY. New York: The Macmillan Company. 1913. $2.50.

To their ample list of astronomical works by such eminent authors as Agnes Clerke, Sir Robert Ball Campbell and Sir Norman Lockyer, the Macmillans now add this excellent text, in considerable part a series of very readable essays, by the Rutherfurd Professor at Columbia.

If we review the astounding progress of the last generation, it is easy to see why the market for astronomical works has so far failed to reach the saturation point. There seems, in fact, to be always room for an up-to-date book by a practical astronomer who knows his subject and has a due sense of

literary values. Such is the present one, in many respects an ideal work: a plain, straightforward treatise, by an astronomer of broad experience and exceptional judgment in presentation.

So satisfactory is Professor Jacoby's work, indeed, that we find it much more difficult to blame than to praise. As a popular handbook for the general reader, however, it will be far more successful than as a student's text, because that nice balance of topics, abundance of direct definitions, and topical paragraphing, things prerequisite for a text, are quite disregarded. On the other hand, the very frequent cross-references in the text, while a help to the student who inclines to look them up, are a distinct drawback in general perusal because they interrupt the story's continuity and the reader's flow of thought.

The stories of Sir William Herschel's discovery of Uranus, and the Adams-LeVerrier discovery of Neptune, are in the author's best popular style; and his non-mathematical story of the astronomer's method of ascertaining the orbit or path of a new-found planet or comet shows real genius in lucid exposition. Few astronomers but would have pronounced an intelligible statement of this problem in plain language quite impossible; perhaps no other would have attempted it.

Elementary mathematical methods are not neglected, however, and there are found in the appendix symbolic presentations of the methods in solar parallax, the Cavendish experiment for weighing the earth, the rule for Easter, the surface temperature of Mars, and so on. To Mars, by the way, Prof. Jacoby accords much more space than this little, hyper-discust planet deserves, demolishing the habitability hypothesis; and as for the canals themselves, they are ruthlessly wiped off the Martian map. A few other subjects are treated at a length quite beyond that expected in a popular handbook, the calendar, for instance; while such topics as the moon's surface, transits of Mercury and Venus, the great red spot on Jupiter, the Harvard classification of stellar

spectra, researches and instruments of the Carnegie Observatory on Mount Wilson are wholly omitted or dismist with scanty reference.

The illustrations are of a high order, the plate inserts being in the main untouched photographs by Barnard, Ritchey and others, with the exercise of great care in both inclusion and excerption. Especially successful are those of the planets and comets; but the Lick photograph of the quarter moon is a distinctly inferior reproduction. The inevitable diagrams are mostly of the helpful type; occasionally, however, one would mislead rather than help (p. 174, 263). The index is ample and there are not many misprints, few of them of moment: it was Thollon, the French spectroscopist, who assisted Perrotin in verifying Schiaparelli's discoveries on Mars, not Thallon (p. 228); the true doctrine of eclipses belongs to Anaxagoras of Clazomenae, centuries before Hipparchus (p. 297); the breadth of total solar eclipse paths can not exceed 170 miles, not 70 (p. 303); and there are wide intervals between proof-readers' errata, from which no work was ever free, save the one far-famed edition of the Koran in which an encouraging prefatory note assured the faithful, "There is no error in this book."

To illustrate American progress in teaching astronomy, we may contrast such a work as Prof. Jacoby's with Enfield's *Philosophy* revised by President Webber of Harvard and used at Amherst eighty years ago, in which there is no mention of the solar corona nor of meteors, while the chapter on the sun is only a page in length, and the student is told that "comets are opaque and solid bodies." Or if we go back to an earlier era at Harvard and Yale, we find, Prof. Jacoby assures us, "the Ptolemaic system actually taught as a possible alternative theory to the Copernican."

DAVID TODD

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Probably if one lives long enough he will find that some progress is being made in improving the oral speech of the American people. Only recently a critic who had heard a public address by the President of the United States, wrote a letter to a newspaper calling attention to three peculiarities of the President's pronunciation. It so happened that each of the three was correct and at variance with common American practise. When a president begins to lead the speech of the people to a higher plane there is every reason to be encouraged. In *Oral English in secondary schools*, Mr. William P. Smith of the Stuyvesant High School, New York, offers some apparatus for the high school teacher. Less composition writing and more training in oral English, ought to be the motto of English teachers generally, both in school and in college. Composition writing has been shockingly overdone. Oral English has been still more shockingly neglected. (New York: The Macmillan Company, 1913. 358 p. $1.00.)

There is nothing that seems to us worthy of particular comment in *The modern short story* by Miss Notestein and Professor W. H. Dunn. (New York: A. S. Barnes Company, 1914. 203 p.)

A return to an earlier day that is not unwise altho it might have been much better done, is *Constructive English grammar*, by Mathilde E. Holtz, of Minneapolis, Minn. (Minneapolis: Augsburg Publishing House. 280 p.)

Textbooks in the household arts continue to multiply amazingly. An eminently practical addition to the lists is *Foods and household management*, by Professor Helen Kinne and Assistant Professor Anna M. Cooley, of Teachers College, Columbia University. Some of the illustrations, and particularly some of the studies of family budgets are exceptionally interesting and helpful. (New York: The Macmillan Company, 1913. 401 p. $1.10.)

A subject about which the average schoolboy and schoolgirl know next to nothing is the history of geography. This

gap can now be quickly supplied by the reading of the little book bearing the title *History of geography*, which has just been written by Professor J. Scott Keltie and Assistant Secretary Howarth of the British Association for the Advancement of Science. In brief compass the story of our geographical knowledge and geographical apparatus is well and clearly told. (New York: G. P. Putnam's Sons, 1913. 208 p. 75 c.)

A more than usually good reading book for beginners in French is *Chez nous*, by Assistant Professor David of the University of Chicago. It is based on a well-known German model and is thoroly practical and well ordered. A study of it will quickly initiate the beginner into many of the mysteries of colloquial French. (New York: Henry Holt & Company, 1914. 393 p. 80c.)

A collection of familiar German songs that will revive many memories and associations is *Deutsche Lieder*, by Director Peter Scherer of Indiana, and Louis H. Dirks of the Shortridge High School of that city. We miss Mendelssohn's beautiful *Forest hymn* from the collection. (New York: American Book Company, 1913. 110 p. 25c.)

Two additions have just now been made to Merrill's German texts. One of these is *Kindertränen*, by Ernest von Wildenbruch, and the other is Gerstäcker's *Germelshousen*. Both are capital reading books for schools. (New York: Charles E. Merrill Company, 1914. 192 p. 50c.; 122 p. 40c.)

A wise man used to say that when a hitherto unknown author writes a book he ought to have the grace to tell, either on the title page or in his preface, who he is. We are disposed to press this question in regard to Frederic Mathews, the author of a stout volume entitled, *Taxation and the distribution of wealth*, that has just reached us. The book is a good deal more than an economic treatise. It touches upon political theory, upon the history of thought

and opinion, and upon topics of contemporary political discussion. The treatment of these topics is not particularly well ordered and is often diffuse. We find, however, much keen thinking and helpful criticism in the pages of a book which ought not to be overlookt by students of social organization. (New York: Doubleday Page & Company, 1914. 680 p. $2.50.)

We have called attention several times of late to the excellent textbooks that come from the house of G. Bell & Sons in London. Still two others that deserve favorable comment are now on our table. The first of these is entitled, *Early English social history*, by Agnes F. Dodd. The author has set herself the task of furnishing an effective historical background for the events and characters in the history of England down thru the period of the early Norman kings. She has done it with exceptional skill. There are very few teachers of history, however well read, who will not be able to read this book with interest and use it in connection with their teaching of English or a general European history. (211 p. 2s.)

The second of the books to which we refer deals not with history, but with literature. It is entitled, *Representative passages from English literature*, arranged by William Henry Hudson and intended to accompany his *Outline history of English literature*. One notes with pleasure the inclusion in his list of authors of a number of names not frequently found in books of this kind. For instance, there are selections from Lord Buckhurst, from Herbert, from Walton, from Bunyan and from Blake. (London: G. Bell & Sons, 1914. 314 p. 2s. 6d.)

Every serious student of the philosophy of education is familiar with the name and reputation of Professor Dr. Rein of Jena. There has just come from the press a new and fourth of his *Grundriss der Ethik* which is marked by careful and close application of his ethical insight and solutions to present-day problems of personal life and social con-

duct. Like all of Dr. Rein's work this book is marked by clear thinking and that sort of skill in exposition which the natural-born teacher commands and which is increased by experience. (Leipzig: A. W. Zickfeldt, 1913. 390 p. 5M.)

A little volume entitled *Elementary general science, book I*, is a queer sort of book and crude in many ways. Nevertheless, it contains much that is of practical value, altho the style of the writer is not fortunate. It is intended to be used in grammar grades. The author is Percy E. Rowell, of Berkeley, California. (Berkeley, California, 1913. 189 p. 75c.)

It is refreshing to see any book that bears on the title page the familiar name of William Graham Sumner, so long an ornament of Yale University, as well as a forceful and informing teacher of economics and social science. Mr. Albert G. Kelley has brought together a number of Professor Sumner's essays and papers with the title *Earth hunger and other essays*. It is a truly extraordinary collection of papers which results. Stimulus to thought, and to clear thought, is found on almost every page. We earnestly commend this book to those who wish to sharpen their vision and to broaden their horizon in respect to current social problems. (New Haven: Yale University Press, 1913. 377 p. $2.25.)

We are reminded of the new alliance between science and business by the appearance of two books which open up a new field for reading and study. The first is *Advertising and selling*, by H. L. Hollingworth, of Columbia University, and the second is *Selling forces*. Both books deal, altho in very different ways, with what Dr. Hollingworth calls the principles of appeal and response. Doubtless most business men will raise their eyebrows at these attempts to assist them commercially by applications of scientific facts to business methods. We imagine, however, that a closer examination of these two books will change their point of view. (New York: D. Appleton & Company, 1913. 314 p. $1.50. Philadelphia: Curtis Publishing Company, 1913. 281 p. $2.00.)

Professor Findlay of the University of Manchester has produced a more than usually significant and interesting book in his volume entitled *The Demonstration school record No. II.* The book contains the record of work done in connection with the so-called Fielden Demonstration School, and represents one of the most serious and intensive attempts to study experimentally the educational process that is going on anywhere in the world. The *Record* is, of course, highly technical, but competent teachers and particularly students of education in universities and normal schools will find it a veritable mine of suggestion. (New York: Longmans, Green & Company, 1913. 284 p. $1.60.)

In the second volume of his *Unterrichtslehre,* Herman Itschner carries forward his analysis of the teaching process and its subject matter in a thoro-going and highly practical fashion. His definitions and analyses of nature study, of history, of geography, of religious instruction and of ethics are admirably done. The book is the work of a skilled and experienced teacher whose experience has been built up on a sincere and profound philosophy. (Leipzig: Quelle & Meyer, 1913. 492 p. M 7.80.)

A thoroly good book that is sufficiently simple to be used by teachers and parents who have no medical training, is *Medical and sanitary inspection of schools,* by Dr. S. W. Mewmayer, of Philadelphia. With this book on her desk, an observant teacher ought to be able to detect the earliest signs of most of the contagious diseases of childhood. (Philadelphia: Lea & Febriger, 1913. 318 p. $2.50.)

In the same general field of interest, but of an entirely different type, is *School health administration,* by L. W. Rapeer, of the New York Training School for Teachers. The author has set himself the task of discovering what American cities are actually doing for the health of their population thru the public schools, and also how what they are doing can be improved and made more effective. The result is a thoro and complete treatment of the entire sub-

ject. We commend the book to those charged with the oversight of schools and school systems. (New York: Teachers College, 1913. 360 p. $2.00.)

In *Heredity and sex* Professor Thomas H. Morgan, of Columbia University, has produced a book of capital importance written in language as understandable as the subject admits. He has laid before the general reader an exposition of the latest thought and experimentation in heredity, particularly as related to sex distinctions. (New York: Columbia University Press, 1913. 278 p. $1.50.)

A new treatment of the chemical aspects of industry, entitled *Industrial chemistry*, written by Professor Henry K. Benson of the University of Washington, begins with an examination of the simplest industrial operations and a treatment of the atmosphere and water and its composition and then goes on to the use of lubricants and the various manufacturies of iron, clay and other materials. This book is one of the best of its type and should have a successful career as a textbook. (New York: The Macmillan Company, 1913. 431 p. $1.91.)

We have already called attention to the rapidly increasing number of books on domestic science, and now find another added to the list. This is *A Textbook of domestic science* for high schools by Miss Matilda Y. Campbell, of Toledo. (New York: The Macmillan Company, 1913. 208 p. 90c.)

The only field in which more textbooks are being written than domestic science is probably agriculture. *Soils and crops* by Thomas S. Hunt of the University of California, and Charles W. Burkett, editor of the American Agriculturist, is the last of these. It covers a wide field and is particularly well ordered. (New York: Orange Judd Company, 1913. 541 p. $1.50.)

Can there possibly be any other than a purely commercial reason for the publication of new textbooks on plane and

solid geometry? If so we can not find it in *Plane and solid geometry* by Professor Walter B. Ford of the University of Michigan, and Charles Ammerman of the McKinley High School, St. Louis. (New York: The Macmillan Company, 1913. 321 p. $1.25.)

Analytical geometry is a different matter. There is a good deal of opportunity here for improved treatment, for new types of problems and for a varied arrangement of topics. All these we find in *Analytical geometry* by Professors Ziwet and Hopkins of the University of Michigan. (New York: The Macmillan Company, 1913. 369 p. $1.60.)

We have frequently had occasion to point out how much better some of the English-made textbooks are than corresponding books written in this country. A new illustration of this difference offers itself in the little volume entitled *Numerical trigonometry*, by Messrs. W. G. Borchardt and Perrott. The use of types, the diagrams, the problems and the special test papers are all excellent. (London: G. Bell & Sons, 1913. 159 p. 2s. 6d.)

The sixth book of Thucydides has been edited all by itself by Professor Charles Forster Smith of the University of Wisconsin. It is a bad habit, widely prevalent in this country, to pick in this way at the great classics. Professor Smith's editing and his notes are capital, but they do not recompense the student for not reading the whole of the history of the great master. (Boston: Ginn & Company, 1913. 250 p. $1.50.)

There are much better books, we venture to think, on Latin prose composition than the little volume entitled *Aids to Latin prose composition* by James A. Klesit, S. J. A distinctly good feature of the book, however, is the appendix containing Latin prose versions of some well-known passages of English literature. (New York: Schwarz, Kirwinn & Fauss, 1913. 104 p.)

We like the *Deutsches Lese- und Uebungsbuch* by Professor Prokosch of the University of Texas. The selections are well chosen and their distribution according to subject over the different parts of the German Empire particularly interesting. (New York: Henry Holt & Company, 1913. 117 p. 50c.)

Another good book of which we are glad to see a new edition is a *Scientific German reader* by Dr. George T. Dippold. This book has already been used by one or more generations of American scientific students and it deserves a life of several generations more. (Boston: Ginn & Company, 1913. 360 p. $1.00.)

Edward Mantley, of the Englewood High School, of Chicago, has made a reading book for students of German out of selections of the *Lebenserrinnerungen* of Carl Schurz. (Boston: Allyn & Bacon, 1913. 80 p. $1.00.)

A capital little book, both for reading and for carrying in the pocket when travelling in France is *Ca et Là en France*, by J. Grant Cramer of the De Witt Clinton High School, New York. It is an unusually attractive little book as it is an unusually practical one. (New York: American Book Company, 1913. 167 p. 45c.)

Dr. Walter Pierce, of Yale University, has made an interesting small edition of Pierre Loti's *Pêcheur d'Islande*, which is certain to have, as it deserves, a wide reading. (Boston: Ginn & Company, 1913. 203 p. 45c.)

In a charming volume entitled *Facts about Shakespeare* that will serve as a most satisfactory introduction to further study, Professor Neilson, of Harvard, and A. H. Thorndike, of Columbia, have put together substantially all that was known about Shakespeare the man, and Shakespeare the man of letters. (New York: The Macmillan Company, 1913. 273 p. 60c.)

X

NOTES AND NEWS

As to conditions in Minneapolis

In the issue of this REVIEW for March last there appeared (p. 321) a comment on educational conditions in Minneapolis based upon statements contained in the *Minneapolis Evening Tribune*, the accuracy of which was vouched for by a correspondent who called attention to them. In that comment the REVIEW criticized the deposition of Superintendent Jordan without any debate or discussion of his record and public service.

Since the publication of the comment in question the REVIEW has been advised by two Minneapolis correspondents in whom it has complete confidence, that it was misled thru accepting without farther inquiry the statement as to Dr. Jordan's deposition which the *Minneapolis Evening Tribune* printed.

From the letters of our two correspondents we make the following extracts:

I.

"Minneapolis has been peculiarly fortunate in securing on her official boards many citizens who without the slightest political ambition have sought to render their city a civic service. Six of the seven members of the school board with great reluctance and with sincere sympathy for the present superintendent have slowly come to the conviction during the past two years that their oath of office required that they should retire the present incumbent. The easy thing would have been to continue the present order; the hard thing has been to fulfil a duty which has seemed imperative. In past years the office has, I believe, been well filled; our conviction is that such is not now the case. That there should be opposition and violent statements made is inevitable in view of the thirty-one years of the superintendent's service in this city."

II.

"The present Board of Education of Minneapolis is composed of men and women of a very high type and enjoys the confidence of the city to an unusual degree. They are not at all the sort who would form a snap judgment or who would be guilty of 'bureaucratic despotism.'

"In the dismissal of Dr. Jordan they acted with the utmost deliberation and with consistent policy of making the change with the greatest possible kindness and consideration. They have indeed been subjected to a great amount of criticism for their failure to act at an earlier date than has come to them since the action was taken.

"The question of the desirability of Dr. Jordan's reelection was raised four years ago but he was elected by a four to three vote for the usual term of three years. During that time and since the schools have made relatively little progress and what has been accomplished was due more to the devoted and untiring labors of members of the Board than to any initiative on the part of the superintendent.

"For a period of six months, just before the conclusion of his term of office, he was ill and absent from his duties and during that time every consideration was shown him. Shortly after his recovery, he was reelected, not for the usual term, but for a single year. At the time of his election two at least of the members of the Board went to him, in an entirely friendly way, in an endeavor to induce him to accept the situation and to join the Board in the selection of a fit successor. This Dr. Jordan refused to do.

"His term of office closes on June 30, 1914. In December of the last year, it was indicated to him that he would not be reelected. Immediately and, perhaps, naturally he began, thru his friends and with the assistance of the *Minneapolis Tribune*, a campaign of villification of a very unpleasant sort directed against certain members of the Board whom he considered to be the leaders of those opposed to him. The Board held a public meeting at which his friends were given every opportunity to state his case and early in January, after carefully considering all the facts, they voted, by a six to one vote, that the superintendent should not be reeelected and that a committee should be appointed to choose a suitable successor. They confined their public statement to the very obvious fact that efficient work in the management of the schools demanded the change.

"If Dr. Jordan stated, as he is quoted in the *Tribune* and again in the REVIEW, that 'he knew of no reason why his reelection was refused and.... that the school board had not found fault with him or given him any notion that they believed that he was an unsatisfactory official' his memory served him very poorly."

From these statements it plainly appears that the account of the whole matter given to the public by the *Minneapolis Evening Tribune* was incorrect. The basis of the criticism which appeared in the March issue of the REVIEW was not that Dr. Jordan was deposed, but that he was deposed without any discussion or consideration of his long record and public service. It now appears that this did not occur. The REVIEW very much regrets having been led, thru the acceptance of a newspaper statement, into an unwarranted criticism of the Minneapolis Board of Education.

Thoughts of men who think

"You are surprized to learn that I have not a high opinion of Mr. Jefferson, and I am surprized at your surprize. I am certain that I never wrote a line, and that I never in Parliament in conversation, or even on the hustings—a place where it is the fashion to court the populace—uttered a word indicating the opinion that the supreme authority in a State ought to be entrusted to the majority of citizens told by the head; in other words, to the poorest and most ignorant part of society. I have long been convinced that institutions purely democratic must, sooner or later, destroy liberty or civilization, or both.

"In Europe, where the population is dense, the effect of such institutions would be almost instantaneous. What happened lately in France is an example. In 1848 a pure democracy was established there. During a short time there was a strong reason to expect general exploitation, a national bankruptcy, a new partition of the soil, a maximum of prices, a ruinous load of taxation laid on the rich for the purpose of supporting the poor in idleness. Such a system would, in twenty years, have made France as poor and barbarous as the France of the Carlovingians. Happily the danger was averted, and now there is a despotism, a silent tribune, an enslaved press; liberty is gone, but civilization has been saved. I have not the smallest doubt that if we had a purely democratic government here the effect would be the same. Either the poor would plunder the rich and civilization would perish, or order and property would be saved by a strong military government, and liberty would perish. You may think that your country enjoys an exemption from these evils. I will frankly own to you that I am of a very different opinion.

"Your fate I believe to be certain, tho it is deferred by a physical cause. As long as you have a boundless extent of fertile and unoccupied land, your laboring population will be far more at ease than the laboring population of the old world; and while that is the case the Jeffersonian policy may continue to exist without causing any fatal calamity.

But the time will come when New England will be as thickly peopled as old England. Wages will be as low, and will fluctuate as much, with you as with us. You will have your Manchesters and your Birminghams. Hundreds and thousands of artisans will asuredly be sometimes out of work. Then your institutions will be fairly brought to the test. Distress everywhere makes the laborer mutinous and discontented, and inclines him to listen with eagerness to agitators who tell him that it is a monstrous iniquity that one man should have a million while another can not get a full meal. In bad years there is plenty of grumbling here, and sometimes a little rioting. But it matters little, for here the sufferers are not the rulers.

"The supreme power is in the hands of a class, numerous indeed, but select, of an educated class, of a class which is and knows itself to be deeply interested in the security and the maintenance of order. Accordingly, the malcontents are firmly yet greatly restrained. The bad time is got over without robbing the wealthy to relieve the indigent. The springs of national prosperity soon begin to flow again; work is plentiful; wages rise, and all is tranquility and cheerfulness. I have seen England three or four times pass thru such critical seasons as I have described. Thru such seasons the United States will have to pass in the course of the next century, if not of this. How will you pass thru them? I heartily wish you a good deliverance. But my reason and my wishes are at war, and I can not help foreboding the worst.

"It is quite plain that your government will never be able to restrain a distrest and a discontented majority. For with you the majority is the government, and has the rich, who are always a minority, absolutely at its mercy. The day will come, when, in the state of New York, a multitude of people, none of whom had more than half a breakfast, or expect to have more than half a dinner, will choose the Legislature. Is it possible to doubt what sort of a Legislature will be chosen? On the one side is a statesman

preaching patience, respect for vested rights, strict observance of public faith. On the other is a demagogue ranting about the tyranny of capitalists and userers, and asking why anybody should be permitted to drink champagne, and to ride in a carriage while thousands of honest people are in want of necessaries? Which of the two candidates is likely to be preferred by a workingman who hears his children cry for bread?

"I seriously apprehend that you will, in some such season of adversity as I have described, do things which will prevent prosperity from returning; that you will act like a people in a year of scarcity—devour all the seed corn, and thus make the next year a year, not of scarcity, but of absolute failure. There will be, I fear, spoilation. The spoilation will increase distress. The distress will produce fresh spoilation. There is nothing to stay you. Your constitution is all sail and anchor. As I said before, when society has entered on this downward progress either civilization or liberty must perish. Either some Caesar or Napoleon will seize the reins of government with a strong hand, or your republic will be as fearfully plundered and laid waste by barbarians in the twentieth century as the Roman empire was in the fifth; with this difference, that the Huns and Vandals who ravaged the Roman empire came from without, and that your Huns and Vandals will have been engendered within your country by your own institutions.

"Thinking this, of course, I can not reckon Jefferson among the benefactors of mankind."—From a letter written to an American gentleman by LORD MACAULAY, May 23, 1857.

"The service that can be rendered by a politician of genius who, eschewing more popular and lucrative functions, will set himself to create opinion in favour of peace, can not well be overestimated, for every country is in the hands of statesmen and journalists in whom the old leaven of Palmerston and his like is all too slowly dying, while the penal-

ties for actual war are increasing at the accelerated pace of all modern evolution. Such a service was rendered by John Bright. He showed the world how a war can be patriotically denounced, with permanent effects upon opinion in favour of keeping peace. It is indeed no easy art. If he had taken high "Quaker" ground, condemning all war, he would have accomplished little. But he never denied the abstract right to take up arms on good occasion, and shortly afterwards proved his good faith by supporting the suppression of the Indian mutiny and of the slave-owners' secession in America. On the Crimean question he met the wise men of the Foreign Office and of the Treasury Bench on their own ground, and routed them on their own dispatches as reported in their own Blue Books. He showed them, in the mysteries of which they claimed to be high priests, to be the muddlers that such lofty claimants often are. He exposed the wordy superstitions of the Foreign Office for which England gave 30,000 gallant lives of her own, and sacrificed half a million lives of men of other nations, and brought misery and starvation once more to the doors of our people at home. Only the union of a clear understanding of the facts and issues with an oratory as dignified as it was telling in its emotional effects, could have driven home that most needful lesson to the rulers and people of Britain, for a while."—Trevelyan's *Life of John Bright*, p. 218.

The attention of all subscribers of the EDUCATIONAL REVIEW is called to the fact that hereafter written notice of the date at which subscriptions are to expire will not be sent from the office of publication. The printed label, containing the address to which each copy of the REVIEW is mailed, will hereafter include the date of the expiry of each subscription. This will be regarded as adequate notice to subscribers. All changes of address must be promptly reported to the office of publication in order to insure the delivery of the REVIEW.